

dxflib

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Chapter 1

Todo List

Member `DL_Dxf::addAttribute (DL_CreationInterface *creationInterface)`

add attrib instead of normal text

Member `DL_Dxf::getStrippedLine (std::string &s, unsigned int size, FILE *stream, bool stripSpace=true)`

Change function to use safer FreeBSD `strl*` functions

Is it a problem if line is blank (i.e., newline only)? Then, when function returns, (`s==NULL`).

Class `DL_Writer`

Add error checking for string/entry length.

Class `DL_WriterA`

What if `fname` is `NULL`? Or `fname` can't be opened for another reason?

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

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Chapter 3

Class Index

3.1 Class List

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File Index

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Chapter 5

Class Documentation

5.1 DL_ArcAlignedTextData Struct Reference

Arc Aligned Text Data.

```
#include <dl_entities.h>
```

Public Attributes

- std::string [text](#)
- std::string [font](#)
- std::string [style](#)
- double [cx](#)
- double [cy](#)
- double [cz](#)
- double [radius](#)
- double [xScaleFactor](#)
- double [height](#)
- double [spacing](#)
- double [offset](#)
- double [rightOffset](#)
- double [leftOffset](#)
- double [startAngle](#)
- double [endAngle](#)
- bool [reversedCharacterOrder](#)
- int [direction](#)
- int [alignment](#)
- int [side](#)
- bool [bold](#)
- bool [italic](#)
- bool [underline](#)
- int [characerSet](#)
- int [pitch](#)
- bool [shxFont](#)
- bool [wizard](#)
- int [arcHandle](#)

5.1.1 Detailed Description

Arc Aligned Text Data.

5.1.2 Member Data Documentation

5.1.2.1 alignment

```
int DL_ArcAlignedTextData::alignment
```

Alignment: 1: fit 2: left 3: right 4: center

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.2 arcHandle

```
int DL_ArcAlignedTextData::arcHandle
```

Arc handle/ID

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.3 bold

```
bool DL_ArcAlignedTextData::bold
```

Bold flag

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.4 characerSet

```
int DL_ArcAlignedTextData::characerSet
```

Character set value. Windows character set identifier.

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.5 cx

```
double DL_ArcAlignedTextData::cx
```

X coordinate of arc center point.

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.6 cy

```
double DL_ArcAlignedTextData::cy
```

Y coordinate of arc center point.

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.7 cz

```
double DL_ArcAlignedTextData::cz
```

Z coordinate of arc center point.

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.8 direction

```
int DL_ArcAlignedTextData::direction
```

Direction 1: outward from center 2: inward from center

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.9 endAngle

```
double DL_ArcAlignedTextData::endAngle
```

End angle (radians)

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.10 font

```
std::string DL_ArcAlignedTextData::font
```

Font name

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.11 height

```
double DL_ArcAlignedTextData::height
```

Text height

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.12 **italic**

```
bool DL_ArcAlignedTextData::italic
```

Italic flag

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.13 **leftOffset**

```
double DL_ArcAlignedTextData::leftOffset
```

Left offset

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.14 **offset**

```
double DL_ArcAlignedTextData::offset
```

Offset from arc

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.15 **pitch**

```
int DL_ArcAlignedTextData::pitch
```

Pitch and family value. Windows pitch and character family identifier.

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.16 **radius**

```
double DL_ArcAlignedTextData::radius
```

Arc radius.

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.17 **reversedCharacterOrder**

```
bool DL_ArcAlignedTextData::reversedCharacterOrder
```

Reversed character order: false: normal true: reversed

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.18 rightOffset

```
double DL_ArcAlignedTextData::rightOffset
```

Right offset

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.19 shxFont

```
bool DL_ArcAlignedTextData::shxFont
```

Font type: false: TTF true: SHX

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.20 side

```
int DL_ArcAlignedTextData::side
```

Side 1: convex 2: concave

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.21 spacing

```
double DL_ArcAlignedTextData::spacing
```

Character spacing

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.22 startAngle

```
double DL_ArcAlignedTextData::startAngle
```

Start angle (radians)

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.23 style

```
std::string DL_ArcAlignedTextData::style
```

Style

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.24 text

```
std::string DL_ArcAlignedTextData::text
```

Text string

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.25 underline

```
bool DL_ArcAlignedTextData::underline
```

Underline flag

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.26 wizard

```
bool DL_ArcAlignedTextData::wizard
```

Wizard flag

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.1.2.27 xScaleFactor

```
double DL_ArcAlignedTextData::xScaleFactor
```

Relative X scale factor.

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

The documentation for this struct was generated from the following file:

- [src/dl_entities.h](#)

5.2 DL_ArcData Struct Reference

Arc Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_ArcData](#) (double acx, double acy, double acz, double aRadius, double aAngle1, double aAngle2)
Constructor.

Public Attributes

- double [cx](#)
- double [cy](#)
- double [cz](#)
- double [radius](#)
- double [angle1](#)
- double [angle2](#)

5.2.1 Detailed Description

Arc Data.

5.2.2 Constructor & Destructor Documentation

5.2.2.1 DL_ArcData()

```
DL_ArcData::DL_ArcData (  
    double acx,  
    double acy,  
    double acz,  
    double aRadius,  
    double aAngle1,  
    double aAngle2) [inline]
```

Constructor.

Parameters: see member variables.

5.2.3 Member Data Documentation

5.2.3.1 angle1

```
double DL_ArcData::angle1
```

Startangle of arc in degrees.

Referenced by [DL_Dxf::writeArc\(\)](#).

5.2.3.2 angle2

```
double DL_ArcData::angle2
```

Endangle of arc in degrees.

Referenced by [DL_Dxf::writeArc\(\)](#).

5.2.3.3 cx

```
double DL_ArcData::cx
```

X Coordinate of center point.

Referenced by [DL_Dxf::writeArc\(\)](#).

5.2.3.4 cy

```
double DL_ArcData::cy
```

Y Coordinate of center point.

Referenced by [DL_Dxf::writeArc\(\)](#).

5.2.3.5 cz

```
double DL_ArcData::cz
```

Z Coordinate of center point.

Referenced by [DL_Dxf::writeArc\(\)](#).

5.2.3.6 radius

```
double DL_ArcData::radius
```

Radius of arc.

Referenced by [DL_Dxf::writeArc\(\)](#).

The documentation for this struct was generated from the following file:

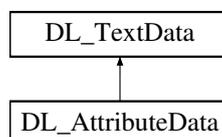
- src/dl_entities.h

5.3 DL_AttributeData Struct Reference

Block attribute data.

```
#include <dl_entities.h>
```

Inheritance diagram for DL_AttributeData:



Public Member Functions

- **DL_AttributeData** (const [DL_TextData](#) &tData, const std::string &tag)
- **DL_AttributeData** (double [ipx](#), double [ipy](#), double [ipz](#), double [apx](#), double [apy](#), double [apz](#), double [height](#), double [xScaleFactor](#), int [textGenerationFlags](#), int [hJustification](#), int [vJustification](#), const std::string &tag, const std::string &text, const std::string &style, double [angle](#))

Constructor.

Public Member Functions inherited from [DL_TextData](#)

- **DL_TextData** (double [ipx](#), double [ipy](#), double [ipz](#), double [apx](#), double [apy](#), double [apz](#), double [height](#), double [xScaleFactor](#), int [textGenerationFlags](#), int [hJustification](#), int [vJustification](#), const std::string &text, const std::string &style, double [angle](#))

Constructor.

Public Attributes

- std::string [tag](#)

Public Attributes inherited from [DL_TextData](#)

- double [ipx](#)
- double [ipy](#)
- double [ipz](#)
- double [apx](#)
- double [apy](#)
- double [apz](#)
- double [height](#)
- double [xScaleFactor](#)
- int [textGenerationFlags](#)
- int [hJustification](#)

Horizontal justification.

- int [vJustification](#)

Vertical justification.

- std::string [text](#)
- std::string [style](#)
- double [angle](#)

5.3.1 Detailed Description

Block attribute data.

5.3.2 Constructor & Destructor Documentation

5.3.2.1 DL_AttributeData()

```
DL_AttributeData::DL_AttributeData (  
    double ipx,  
    double ipy,  
    double ipz,  
    double apx,  
    double apy,  
    double apz,  
    double height,  
    double xScaleFactor,  
    int textGenerationFlags,  
    int hJustification,  
    int vJustification,  
    const std::string & tag,  
    const std::string & text,  
    const std::string & style,  
    double angle) [inline]
```

Constructor.

Parameters: see member variables.

5.3.3 Member Data Documentation

5.3.3.1 tag

```
std::string DL_AttributeData::tag
```

Tag.

The documentation for this struct was generated from the following file:

- src/dl_entities.h

5.4 DL_Attributes Class Reference

Storing and passing around attributes.

```
#include <dl_attributes.h>
```

Public Member Functions

- **DL_Attributes** ()
Default constructor.
- **DL_Attributes** (const std::string &layer, int color, int width, const std::string &linetype, double linetypeScale)
Constructor for DXF attributes.
- **DL_Attributes** (const std::string &layer, int color, int color24, int width, const std::string &linetype, int handle=1)
Constructor for DXF attributes.
- void **setLayer** (const std::string &layer)
Sets the layer.
- std::string **getLayer** () const
- void **setColor** (int color)
Sets the color.
- void **setColor24** (int color)
Sets the 24bit color.
- int **getColor** () const
- int **getColor24** () const
- void **setWidth** (int width)
Sets the width.
- int **getWidth** () const
- void **setLinetype** (const std::string &linetype)
Sets the line type.
- void **setLinetypeScale** (double linetypeScale)
Sets the entity specific line type scale.
- double **getLinetypeScale** () const
- std::string **getLinetype** () const
- void **setHandle** (int h)
- int **getHandle** () const
- void **setInPaperSpace** (bool on)
- bool **isInPaperSpace** () const

5.4.1 Detailed Description

Storing and passing around attributes.

Attributes are the layer name, color, width and line type.

Author

Andrew Mustun

5.4.2 Constructor & Destructor Documentation

5.4.2.1 DL_Attributes() [1/2]

```
DL_Attributes::DL_Attributes (
    const std::string & layer,
    int color,
    int width,
    const std::string & linetype,
    double linetypeScale) [inline]
```

Constructor for DXF attributes.

Parameters

<i>layer</i>	Layer name for this entity or NULL for no layer (every entity should be on a named layer!).
<i>color</i>	Color number (0..256). 0 = BYBLOCK, 256 = BYLAYER.
<i>width</i>	Line thickness. Defaults to zero. -1 = BYLAYER, -2 = BYBLOCK, -3 = default width
<i>linetype</i>	Line type name or "BYLAYER" or "BYBLOCK". Defaults to "BYLAYER"

5.4.2.2 DL_Attributes() [2/2]

```
DL_Attributes::DL_Attributes (
    const std::string & layer,
    int color,
    int color24,
    int width,
    const std::string & linetype,
    int handle = -1) [inline]
```

Constructor for DXF attributes.

Parameters

<i>layer</i>	Layer name for this entity or NULL for no layer (every entity should be on a named layer!).
<i>color</i>	Color number (0..256). 0 = BYBLOCK, 256 = BYLAYER.
<i>color24</i>	24 bit color (0x00RRGGBB, see DXF reference).
<i>width</i>	Line thickness. Defaults to zero. -1 = BYLAYER, -2 = BYBLOCK, -3 = default width
<i>linetype</i>	Line type name or "BYLAYER" or "BYBLOCK". Defaults to "BYLAYER"

5.4.3 Member Function Documentation

5.4.3.1 getColor()

```
int DL_Attributes::getColor () const [inline]
```

Returns

Color.

See also

[DL_Codes](#), [dxfColors](#)

Referenced by [DL_Dxf::addLayer\(\)](#), [DL_Writer::entityAttributes\(\)](#), and [DL_Dxf::writeLayer\(\)](#).

5.4.3.2 getColor24()

```
int DL_Attributes::getColor24 () const [inline]
```

Returns

24 bit color or -1 if no 24bit color is defined.

See also

[DL_Codes](#), [dxfColors](#)

Referenced by [DL_Writer::entityAttributes\(\)](#), and [DL_Dxf::writeLayer\(\)](#).

5.4.3.3 getLayer()

```
std::string DL_Attributes::getLayer () const [inline]
```

Returns

Layer name.

Referenced by [DL_Writer::entityAttributes\(\)](#), and [DL_Dxf::writePolyline\(\)](#).

5.4.3.4 getLinetype()

```
std::string DL_Attributes::getLinetype () const [inline]
```

Returns

Line type.

Referenced by [DL_Dxf::addLayer\(\)](#), [DL_Writer::entityAttributes\(\)](#), and [DL_Dxf::writeLayer\(\)](#).

5.4.3.5 getWidth()

```
int DL_Attributes::getWidth () const [inline]
```

Returns

Width.

Referenced by [DL_Dxf::addLayer\(\)](#), [DL_Writer::entityAttributes\(\)](#), and [DL_Dxf::writeLayer\(\)](#).

5.4.3.6 setColor()

```
void DL_Attributes::setColor (
    int color) [inline]
```

Sets the color.

See also

[DL_Codes](#), [dxfColors](#)

Referenced by [DL_Dxf::addLayer\(\)](#).

5.4.3.7 setColor24()

```
void DL_Attributes::setColor24 (
    int color) [inline]
```

Sets the 24bit color.

See also

[DL_Codes](#), [dxfColors](#)

5.4.3.8 setLayer()

```
void DL_Attributes::setLayer (
    const std::string & layer) [inline]
```

Sets the layer.

If the given pointer points to NULL, the new layer name will be an empty but valid string.

5.4.3.9 setLinetype()

```
void DL_Attributes::setLinetype (
    const std::string & linetype) [inline]
```

Sets the line type.

This can be any string and is not checked to be a valid line type.

Referenced by [DL_Dxf::addLayer\(\)](#).

The documentation for this class was generated from the following file:

- [src/dl_attributes.h](#)

5.5 DL_BlockData Struct Reference

Block Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_BlockData](#) (const std::string &bName, int bFlags, double bbpx, double bbpy, double bbpz)
Constructor.

Public Attributes

- std::string **name**
Block name.
- int **flags**
Block flags.
- double **bp_x**
X Coordinate of base point.
- double **bp_y**
Y Coordinate of base point.
- double **bp_z**
Z Coordinate of base point.

5.5.1 Detailed Description

Block Data.

5.5.2 Constructor & Destructor Documentation

5.5.2.1 DL_BlockData()

```
DL_BlockData::DL_BlockData (  
    const std::string & bName,  
    int bFlags,  
    double bbpx,  
    double bbpy,  
    double bbpz) [inline]
```

Constructor.

Parameters: see member variables.

5.5.3 Member Data Documentation

5.5.3.1 flags

```
int DL_BlockData::flags
```

Block flags.

(not used currently)

The documentation for this struct was generated from the following file:

- src/dl_entities.h

5.6 DL_CircleData Struct Reference

Circle Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_CircleData](#) (double acx, double acy, double acz, double aRadius)
Constructor.

Public Attributes

- double [cx](#)
- double [cy](#)
- double [cz](#)
- double [radius](#)

5.6.1 Detailed Description

Circle Data.

5.6.2 Constructor & Destructor Documentation

5.6.2.1 DL_CircleData()

```
DL_CircleData::DL_CircleData (  
    double acx,  
    double acy,  
    double acz,  
    double aRadius) [inline]
```

Constructor.

Parameters: see member variables.

5.6.3 Member Data Documentation

5.6.3.1 cx

```
double DL_CircleData::cx
```

X Coordinate of center point.

Referenced by [DL_Dxf::writeCircle\(\)](#).

5.6.3.2 cy

```
double DL_CircleData::cy
```

Y Coordinate of center point.

Referenced by [DL_Dxf::writeCircle\(\)](#).

5.6.3.3 cz

```
double DL_CircleData::cz
```

Z Coordinate of center point.

Referenced by [DL_Dxf::writeCircle\(\)](#).

5.6.3.4 radius

```
double DL_CircleData::radius
```

Radius of arc.

Referenced by [DL_Dxf::writeCircle\(\)](#).

The documentation for this struct was generated from the following file:

- `src/dl_entities.h`

5.7 DL_Codes Class Reference

Codes for colors and DXF versions.

```
#include <dl_codes.h>
```

Public Types

- enum [color](#) {
black = 250 , **green** = 3 , **red** = 1 , **brown** = 15 ,
yellow = 2 , **cyan** = 4 , **magenta** = 6 , **gray** = 8 ,
blue = 5 , **l_blue** = 163 , **l_green** = 121 , **l_cyan** = 131 ,
l_red = 23 , **l_magenta** = 221 , **l_gray** = 252 , **white** = 7 ,
bylayer = 256 , **byblock** = 0 }

Standard DXF colors.

- enum [version](#) {
AC1009_MIN , **AC1009** , **AC1012** , **AC1014** ,
AC1015 }

Version numbers for the DXF Format.

5.7.1 Detailed Description

Codes for colors and DXF versions.

The documentation for this class was generated from the following file:

- `src/dl_codes.h`

5.8 DL_ControlPointData Struct Reference

Spline control point data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_ControlPointData](#) (double px, double py, double pz, double weight)
Constructor.

Public Attributes

- double [x](#)
- double [y](#)
- double [z](#)
- double [w](#)

5.8.1 Detailed Description

Spline control point data.

5.8.2 Constructor & Destructor Documentation

5.8.2.1 DL_ControlPointData()

```
DL_ControlPointData::DL_ControlPointData (  
    double px,  
    double py,  
    double pz,  
    double weight) [inline]
```

Constructor.

Parameters: see member variables.

5.8.3 Member Data Documentation

5.8.3.1 w

```
double DL_ControlPointData::w
```

Weight of control point.

5.8.3.2 x

```
double DL_ControlPointData::x
```

X coordinate of the control point.

Referenced by [DL_Dxf::writeControlPoint\(\)](#).

5.8.3.3 y

```
double DL_ControlPointData::y
```

Y coordinate of the control point.

Referenced by [DL_Dxf::writeControlPoint\(\)](#).

5.8.3.4 z

```
double DL_ControlPointData::z
```

Z coordinate of the control point.

Referenced by [DL_Dxf::writeControlPoint\(\)](#).

The documentation for this struct was generated from the following file:

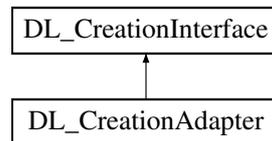
- `src/dl_entities.h`

5.9 DL_CreationAdapter Class Reference

An abstract adapter class for receiving DXF events when a DXF file is being read.

```
#include <dl_creationadapter.h>
```

Inheritance diagram for DL_CreationAdapter:



Public Member Functions

- virtual void [processCodeValuePair](#) (unsigned int, const std::string &)
Called for every code / value tuple of the DXF file.
- virtual void [endSection](#) ()
Called when a section (entity, table entry, etc.) is finished.
- virtual void [addLayer](#) (const DL_LayerData &)
Called for every layer.
- virtual void [addLinetype](#) (const DL_LinetypeData &)
Called for every linetype.
- virtual void [addLinetypeDash](#) (double)
Called for every dash in linetype pattern.
- virtual void [addBlock](#) (const DL_BlockData &)
Called for every block.
- virtual void [endBlock](#) ()
Called to end the current block.
- virtual void [addTextStyle](#) (const DL_StyleData &)
Called for every text style.
- virtual void [addPoint](#) (const DL_PointData &)
Called for every point.
- virtual void [addLine](#) (const DL_LineData &)
Called for every line.
- virtual void [addXLine](#) (const DL_XLineData &)
Called for every xline.
- virtual void [addRay](#) (const DL_RayData &)
Called for every ray.
- virtual void [addArc](#) (const DL_ArcData &)
Called for every arc.
- virtual void [addCircle](#) (const DL_CircleData &)
Called for every circle.
- virtual void [addEllipse](#) (const DL_EllipseData &)
Called for every ellipse.
- virtual void [addPolyline](#) (const DL_PolylineData &)
Called for every polyline start.
- virtual void [addVertex](#) (const DL_VertexData &)
Called for every polyline vertex.

- virtual void `addSpline` (const `DL_SplineData` &)
Called for every spline.
- virtual void `addControlPoint` (const `DL_ControlPointData` &)
Called for every spline control point.
- virtual void `addFitPoint` (const `DL_FitPointData` &)
Called for every spline fit point.
- virtual void `addKnot` (const `DL_KnotData` &)
Called for every spline knot value.
- virtual void `addInsert` (const `DL_InsertData` &)
Called for every insert.
- virtual void `addMText` (const `DL_MTextData` &)
Called for every multi Text entity.
- virtual void `addMTextChunk` (const std::string &)
Called for additional text chunks for MTEXT entities.
- virtual void `addText` (const `DL_TextData` &)
Called for every text entity.
- virtual void `addArcAlignedText` (const `DL_ArcAlignedTextData` &)
Called for every arc aligned text entity.
- virtual void `addAttribute` (const `DL_AttributeData` &)
Called for every block Attribute entity.
- virtual void `addDimAlign` (const `DL_DimensionData` &, const `DL_DimAlignedData` &)
Called for every aligned dimension entity.
- virtual void `addDimLinear` (const `DL_DimensionData` &, const `DL_DimLinearData` &)
Called for every linear or rotated dimension entity.
- virtual void `addDimRadial` (const `DL_DimensionData` &, const `DL_DimRadialData` &)
Called for every radial dimension entity.
- virtual void `addDimDiametric` (const `DL_DimensionData` &, const `DL_DimDiametricData` &)
Called for every diametric dimension entity.
- virtual void `addDimAngular` (const `DL_DimensionData` &, const `DL_DimAngular2LData` &)
Called for every angular dimension (2 lines version) entity.
- virtual void `addDimAngular3P` (const `DL_DimensionData` &, const `DL_DimAngular3PData` &)
Called for every angular dimension (3 points version) entity.
- virtual void `addDimOrdinate` (const `DL_DimensionData` &, const `DL_DimOrdinateData` &)
Called for every ordinate dimension entity.
- virtual void `addLeader` (const `DL_LeaderData` &)
Called for every leader start.
- virtual void `addLeaderVertex` (const `DL_LeaderVertexData` &)
Called for every leader vertex.
- virtual void `addHatch` (const `DL_HatchData` &)
Called for every hatch entity.
- virtual void `addTrace` (const `DL_TraceData` &)
Called for every trace start.
- virtual void `add3dFace` (const `DL_3dFaceData` &)
Called for every 3dface start.
- virtual void `addSolid` (const `DL_SolidData` &)
Called for every solid start.
- virtual void `addImage` (const `DL_ImageData` &)
Called for every image entity.
- virtual void `linkImage` (const `DL_ImageDefData` &)
Called for every image definition.
- virtual void `addHatchLoop` (const `DL_HatchLoopData` &)

- Called for every hatch loop.*

 - virtual void [addHatchEdge](#) (const [DL_HatchEdgeData](#) &)

Called for every hatch edge entity.
- virtual void [addXRecord](#) (const std::string &)
- Called for every XRecord with the given handle.*

 - virtual void [addXRecordString](#) (int, const std::string &)

Called for XRecords of type string.
- virtual void [addXRecordReal](#) (int, double)
- Called for XRecords of type double.*

 - virtual void [addXRecordInt](#) (int, int)

Called for XRecords of type int.
- virtual void [addXRecordBool](#) (int, bool)
- Called for XRecords of type bool.*

 - virtual void [addXDataApp](#) (const std::string &)

Called for every beginning of an XData section of the given application.
- virtual void [addXDataString](#) (int, const std::string &)
- Called for XData tuples.*

 - virtual void [addXDataReal](#) (int, double)

Called for XData tuples.
- virtual void [addXDataInt](#) (int, int)
- Called for XData tuples.*

 - virtual void [addDictionary](#) (const [DL_DictionaryData](#) &)

Called for dictionary objects.
- virtual void [addDictionaryEntry](#) (const [DL_DictionaryEntryData](#) &)
- Called for dictionary entries.*

 - virtual void [endEntity](#) ()

Called after an entity has been completed.
- virtual void [addComment](#) (const std::string &)
- Called for every comment in the DXF file (code 999).*

 - virtual void [setVariableVector](#) (const std::string &, double, double, double, int)

Called for every vector variable in the DXF file (e.g.
- virtual void [setVariableString](#) (const std::string &, const std::string &, int)
- Called for every string variable in the DXF file (e.g.*

 - virtual void [setVariableInt](#) (const std::string &, int, int)

Called for every int variable in the DXF file (e.g.
- virtual void [setVariableDouble](#) (const std::string &, double, int)
- Called for every double variable in the DXF file (e.g.*

 - virtual void [endSequence](#) ()

Called when a SEQEND occurs (when a POLYLINE or ATTRIB is done)

Public Member Functions inherited from [DL_CreationInterface](#)

- void [setAttributes](#) (const [DL_Attributes](#) &attrib)
- Sets the current attributes for entities.*

 - [DL_Attributes](#) [getAttributes](#) ()
- void [setExtrusion](#) (double dx, double dy, double dz, double elevation)
- Sets the current attributes for entities.*

 - [DL_Extrusion](#) * [getExtrusion](#) ()

Additional Inherited Members

Protected Attributes inherited from [DL_CreationInterface](#)

- [DL_Attributes](#) `attributes`
- [DL_Extrusion](#) * `extrusion`

5.9.1 Detailed Description

An abstract adapter class for receiving DXF events when a DXF file is being read.

The methods in this class are empty. This class exists as convenience for creating listener objects.

Author

Andrew Mustun

5.9.2 Member Function Documentation

5.9.2.1 `add3dFace()`

```
virtual void DL_CreationAdapter::add3dFace (  
    const DL\_3dFaceData & data) [inline], [virtual]
```

Called for every 3dface start.

Implements [DL_CreationInterface](#).

5.9.2.2 `addArc()`

```
virtual void DL_CreationAdapter::addArc (  
    const DL\_ArcData & data) [inline], [virtual]
```

Called for every arc.

Implements [DL_CreationInterface](#).

5.9.2.3 `addArcAlignedText()`

```
virtual void DL_CreationAdapter::addArcAlignedText (  
    const DL\_ArcAlignedTextData & data) [inline], [virtual]
```

Called for every arc aligned text entity.

Implements [DL_CreationInterface](#).

5.9.2.4 addAttribute()

```
virtual void DL_CreationAdapter::addAttribute (  
    const DL_AttributeData & data) [inline], [virtual]
```

Called for every block Attribute entity.

Implements [DL_CreationInterface](#).

5.9.2.5 addBlock()

```
virtual void DL_CreationAdapter::addBlock (  
    const DL_BlockData & data) [inline], [virtual]
```

Called for every block.

Note: all entities added after this command go into this block until [endBlock\(\)](#) is called.

See also

[endBlock\(\)](#)

Implements [DL_CreationInterface](#).

5.9.2.6 addCircle()

```
virtual void DL_CreationAdapter::addCircle (  
    const DL_CircleData & data) [inline], [virtual]
```

Called for every circle.

Implements [DL_CreationInterface](#).

5.9.2.7 addComment()

```
virtual void DL_CreationAdapter::addComment (  
    const std::string & comment) [inline], [virtual]
```

Called for every comment in the DXF file (code 999).

Implements [DL_CreationInterface](#).

5.9.2.8 addControlPoint()

```
virtual void DL_CreationAdapter::addControlPoint (  
    const DL_ControlPointData & data) [inline], [virtual]
```

Called for every spline control point.

Implements [DL_CreationInterface](#).

5.9.2.9 addDictionary()

```
virtual void DL_CreationAdapter::addDictionary (  
    const DL_DictionaryData & data) [inline], [virtual]
```

Called for dictionary objects.

Implements [DL_CreationInterface](#).

5.9.2.10 addDictionaryEntry()

```
virtual void DL_CreationAdapter::addDictionaryEntry (  
    const DL_DictionaryEntryData & data) [inline], [virtual]
```

Called for dictionary entries.

Implements [DL_CreationInterface](#).

5.9.2.11 addDimAlign()

```
virtual void DL_CreationAdapter::addDimAlign (  
    const DL_DimensionData & data,  
    const DL_DimAlignedData & edata) [inline], [virtual]
```

Called for every aligned dimension entity.

Implements [DL_CreationInterface](#).

5.9.2.12 addDimAngular()

```
virtual void DL_CreationAdapter::addDimAngular (  
    const DL_DimensionData & data,  
    const DL_DimAngular2LData & edata) [inline], [virtual]
```

Called for every angular dimension (2 lines version) entity.

Implements [DL_CreationInterface](#).

5.9.2.13 addDimAngular3P()

```
virtual void DL_CreationAdapter::addDimAngular3P (  
    const DL_DimensionData & data,  
    const DL_DimAngular3PData & edata) [inline], [virtual]
```

Called for every angular dimension (3 points version) entity.

Implements [DL_CreationInterface](#).

5.9.2.14 addDimDiametric()

```
virtual void DL_CreationAdapter::addDimDiametric (  
    const DL_DimensionData & data,  
    const DL_DimDiametricData & edata) [inline], [virtual]
```

Called for every diametric dimension entity.

Implements [DL_CreationInterface](#).

5.9.2.15 addDimLinear()

```
virtual void DL_CreationAdapter::addDimLinear (  
    const DL_DimensionData & data,  
    const DL_DimLinearData & edata) [inline], [virtual]
```

Called for every linear or rotated dimension entity.

Implements [DL_CreationInterface](#).

5.9.2.16 addDimOrdinate()

```
virtual void DL_CreationAdapter::addDimOrdinate (  
    const DL_DimensionData & data,  
    const DL_DimOrdinateData & edata) [inline], [virtual]
```

Called for every ordinate dimension entity.

Implements [DL_CreationInterface](#).

5.9.2.17 addDimRadial()

```
virtual void DL_CreationAdapter::addDimRadial (  
    const DL_DimensionData & data,  
    const DL_DimRadialData & edata) [inline], [virtual]
```

Called for every radial dimension entity.

Implements [DL_CreationInterface](#).

5.9.2.18 addEllipse()

```
virtual void DL_CreationAdapter::addEllipse (  
    const DL_EllipseData & data) [inline], [virtual]
```

Called for every ellipse.

Implements [DL_CreationInterface](#).

5.9.2.19 addFitPoint()

```
virtual void DL_CreationAdapter::addFitPoint (  
    const DL_FitPointData & data) [inline], [virtual]
```

Called for every spline fit point.

Implements [DL_CreationInterface](#).

5.9.2.20 addHatch()

```
virtual void DL_CreationAdapter::addHatch (  
    const DL_HatchData & data) [inline], [virtual]
```

Called for every hatch entity.

Implements [DL_CreationInterface](#).

5.9.2.21 addHatchEdge()

```
virtual void DL_CreationAdapter::addHatchEdge (  
    const DL_HatchEdgeData & data) [inline], [virtual]
```

Called for every hatch edge entity.

Implements [DL_CreationInterface](#).

5.9.2.22 addHatchLoop()

```
virtual void DL_CreationAdapter::addHatchLoop (  
    const DL_HatchLoopData & data) [inline], [virtual]
```

Called for every hatch loop.

Implements [DL_CreationInterface](#).

5.9.2.23 addImage()

```
virtual void DL_CreationAdapter::addImage (  
    const DL_ImageData & data) [inline], [virtual]
```

Called for every image entity.

Implements [DL_CreationInterface](#).

5.9.2.24 addInsert()

```
virtual void DL_CreationAdapter::addInsert (  
    const DL_InsertData & data) [inline], [virtual]
```

Called for every insert.

Implements [DL_CreationInterface](#).

5.9.2.25 addKnot()

```
virtual void DL_CreationAdapter::addKnot (  
    const DL_KnotData & data) [inline], [virtual]
```

Called for every spline knot value.

Implements [DL_CreationInterface](#).

5.9.2.26 addLayer()

```
virtual void DL_CreationAdapter::addLayer (  
    const DL_LayerData & data) [inline], [virtual]
```

Called for every layer.

Implements [DL_CreationInterface](#).

5.9.2.27 addLeader()

```
virtual void DL_CreationAdapter::addLeader (  
    const DL_LeaderData & data) [inline], [virtual]
```

Called for every leader start.

Implements [DL_CreationInterface](#).

5.9.2.28 addLeaderVertex()

```
virtual void DL_CreationAdapter::addLeaderVertex (  
    const DL_LeaderVertexData & data) [inline], [virtual]
```

Called for every leader vertex.

Implements [DL_CreationInterface](#).

5.9.2.29 addLine()

```
virtual void DL_CreationAdapter::addLine (  
    const DL_LineData & data) [inline], [virtual]
```

Called for every line.

Implements [DL_CreationInterface](#).

5.9.2.30 addLinetype()

```
virtual void DL_CreationAdapter::addLinetype (  
    const DL_LinetypeData & data) [inline], [virtual]
```

Called for every linetype.

Implements [DL_CreationInterface](#).

5.9.2.31 addLinetypeDash()

```
virtual void DL_CreationAdapter::addLinetypeDash (  
    double length) [inline], [virtual]
```

Called for every dash in linetype pattern.

Implements [DL_CreationInterface](#).

5.9.2.32 addMText()

```
virtual void DL_CreationAdapter::addMText (  
    const DL\_MTextData & data) [inline], [virtual]
```

Called for every multi Text entity.

Implements [DL_CreationInterface](#).

5.9.2.33 addMTextChunk()

```
virtual void DL_CreationAdapter::addMTextChunk (  
    const std::string & text) [inline], [virtual]
```

Called for additional text chunks for MTEXT entities.

The chunks come at 250 character in size each. Note that those chunks come **before** the actual MTEXT entity.

Implements [DL_CreationInterface](#).

5.9.2.34 addPoint()

```
virtual void DL_CreationAdapter::addPoint (  
    const DL\_PointData & data) [inline], [virtual]
```

Called for every point.

Implements [DL_CreationInterface](#).

5.9.2.35 addPolyline()

```
virtual void DL_CreationAdapter::addPolyline (  
    const DL\_PolylineData & data) [inline], [virtual]
```

Called for every polyline start.

Implements [DL_CreationInterface](#).

5.9.2.36 addRay()

```
virtual void DL_CreationAdapter::addRay (  
    const DL_RayData & data) [inline], [virtual]
```

Called for every ray.

Implements [DL_CreationInterface](#).

5.9.2.37 addSolid()

```
virtual void DL_CreationAdapter::addSolid (  
    const DL_SolidData & data) [inline], [virtual]
```

Called for every solid start.

Implements [DL_CreationInterface](#).

5.9.2.38 addSpline()

```
virtual void DL_CreationAdapter::addSpline (  
    const DL_SplineData & data) [inline], [virtual]
```

Called for every spline.

Implements [DL_CreationInterface](#).

5.9.2.39 addText()

```
virtual void DL_CreationAdapter::addText (  
    const DL_TextData & data) [inline], [virtual]
```

Called for every text entity.

Implements [DL_CreationInterface](#).

5.9.2.40 addTextStyle()

```
virtual void DL_CreationAdapter::addTextStyle (  
    const DL_StyleData & data) [inline], [virtual]
```

Called for every text style.

Implements [DL_CreationInterface](#).

5.9.2.41 addTrace()

```
virtual void DL_CreationAdapter::addTrace (  
    const DL_TraceData & data) [inline], [virtual]
```

Called for every trace start.

Implements [DL_CreationInterface](#).

5.9.2.42 addVertex()

```
virtual void DL_CreationAdapter::addVertex (  
    const DL_VertexData & data) [inline], [virtual]
```

Called for every polyline vertex.

Implements [DL_CreationInterface](#).

5.9.2.43 addXDataApp()

```
virtual void DL_CreationAdapter::addXDataApp (  
    const std::string & appId) [inline], [virtual]
```

Called for every beginning of an XData section of the given application.

Implements [DL_CreationInterface](#).

5.9.2.44 addXDataInt()

```
virtual void DL_CreationAdapter::addXDataInt (  
    int code,  
    int value) [inline], [virtual]
```

Called for XData tuples.

Implements [DL_CreationInterface](#).

5.9.2.45 addXDataReal()

```
virtual void DL_CreationAdapter::addXDataReal (  
    int code,  
    double value) [inline], [virtual]
```

Called for XData tuples.

Implements [DL_CreationInterface](#).

5.9.2.46 addXDataString()

```
virtual void DL_CreationAdapter::addXDataString (  
    int code,  
    const std::string & value) [inline], [virtual]
```

Called for XData tuples.

Implements [DL_CreationInterface](#).

5.9.2.47 addXLine()

```
virtual void DL_CreationAdapter::addXLine (  
    const DL_XLineData & data) [inline], [virtual]
```

Called for every xline.

Implements [DL_CreationInterface](#).

5.9.2.48 addXRecord()

```
virtual void DL_CreationAdapter::addXRecord (  
    const std::string & handle) [inline], [virtual]
```

Called for every XRecord with the given handle.

Implements [DL_CreationInterface](#).

5.9.2.49 addXRecordBool()

```
virtual void DL_CreationAdapter::addXRecordBool (  
    int code,  
    bool value) [inline], [virtual]
```

Called for XRecords of type bool.

Implements [DL_CreationInterface](#).

5.9.2.50 addXRecordInt()

```
virtual void DL_CreationAdapter::addXRecordInt (  
    int code,  
    int value) [inline], [virtual]
```

Called for XRecords of type int.

Implements [DL_CreationInterface](#).

5.9.2.51 addXRecordReal()

```
virtual void DL_CreationAdapter::addXRecordReal (  
    int code,  
    double value) [inline], [virtual]
```

Called for XRecords of type double.

Implements [DL_CreationInterface](#).

5.9.2.52 addXRecordString()

```
virtual void DL_CreationAdapter::addXRecordString (  
    int code,  
    const std::string & value) [inline], [virtual]
```

Called for XRecords of type string.

Implements [DL_CreationInterface](#).

5.9.2.53 endBlock()

```
virtual void DL_CreationAdapter::endBlock () [inline], [virtual]
```

Called to end the current block.

Implements [DL_CreationInterface](#).

5.9.2.54 endEntity()

```
virtual void DL_CreationAdapter::endEntity () [inline], [virtual]
```

Called after an entity has been completed.

Implements [DL_CreationInterface](#).

5.9.2.55 endSection()

```
virtual void DL_CreationAdapter::endSection () [inline], [virtual]
```

Called when a section (entity, table entry, etc.) is finished.

Implements [DL_CreationInterface](#).

5.9.2.56 endSequence()

```
virtual void DL_CreationAdapter::endSequence () [inline], [virtual]
```

Called when a SEQEND occurs (when a POLYLINE or ATTRIB is done)

Implements [DL_CreationInterface](#).

5.9.2.57 linkImage()

```
virtual void DL_CreationAdapter::linkImage (  
    const DL_ImageDefData & data) [inline], [virtual]
```

Called for every image definition.

Implements [DL_CreationInterface](#).

5.9.2.58 processCodeValuePair()

```
virtual void DL_CreationAdapter::processCodeValuePair (  
    unsigned int groupCode,  
    const std::string & groupValue) [inline], [virtual]
```

Called for every code / value tuple of the DXF file.

The complete DXF file contents can be handled by the implementation of this function.

Implements [DL_CreationInterface](#).

5.9.2.59 setVariableDouble()

```
virtual void DL_CreationAdapter::setVariableDouble (  
    const std::string & key,  
    double value,  
    int code) [inline], [virtual]
```

Called for every double variable in the DXF file (e.g.

"\$DIMEXO").

Implements [DL_CreationInterface](#).

5.9.2.60 setVariableInt()

```
virtual void DL_CreationAdapter::setVariableInt (  
    const std::string & key,  
    int value,  
    int code) [inline], [virtual]
```

Called for every int variable in the DXF file (e.g.

"\$ACADMAINTVER").

Implements [DL_CreationInterface](#).

5.9.2.61 setVariableString()

```
virtual void DL_CreationAdapter::setVariableString (
    const std::string & key,
    const std::string & value,
    int code) [inline], [virtual]
```

Called for every string variable in the DXF file (e.g.

"\$ACADVER").

Implements [DL_CreationInterface](#).

5.9.2.62 setVariableVector()

```
virtual void DL_CreationAdapter::setVariableVector (
    const std::string & key,
    double v1,
    double v2,
    double v3,
    int code) [inline], [virtual]
```

Called for every vector variable in the DXF file (e.g.

"\$EXTMIN").

Implements [DL_CreationInterface](#).

The documentation for this class was generated from the following file:

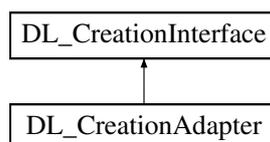
- src/dl_creationadapter.h

5.10 DL_CreationInterface Class Reference

Abstract class (interface) for the creation of new entities.

```
#include <dl_creationinterface.h>
```

Inheritance diagram for DL_CreationInterface:



Public Member Functions

- virtual void `processCodeValuePair` (unsigned int groupCode, const std::string &groupValue)=0
Called for every code / value tuple of the DXF file.
- virtual void `endSection` ()=0
Called when a section (entity, table entry, etc.) is finished.
- virtual void `addLayer` (const `DL_LayerData` &data)=0
Called for every layer.
- virtual void `addLinetype` (const `DL_LinetypeData` &data)=0
Called for every linetype.
- virtual void `addLinetypeDash` (double length)=0
Called for every dash in linetype pattern.
- virtual void `addBlock` (const `DL_BlockData` &data)=0
Called for every block.
- virtual void `endBlock` ()=0
Called to end the current block.
- virtual void `addTextStyle` (const `DL_StyleData` &data)=0
Called for every text style.
- virtual void `addPoint` (const `DL_PointData` &data)=0
Called for every point.
- virtual void `addLine` (const `DL_LineData` &data)=0
Called for every line.
- virtual void `addXLine` (const `DL_XLineData` &data)=0
Called for every xline.
- virtual void `addRay` (const `DL_RayData` &data)=0
Called for every ray.
- virtual void `addArc` (const `DL_ArcData` &data)=0
Called for every arc.
- virtual void `addCircle` (const `DL_CircleData` &data)=0
Called for every circle.
- virtual void `addEllipse` (const `DL_EllipseData` &data)=0
Called for every ellipse.
- virtual void `addPolyline` (const `DL_PolylineData` &data)=0
Called for every polyline start.
- virtual void `addVertex` (const `DL_VertexData` &data)=0
Called for every polyline vertex.
- virtual void `addSpline` (const `DL_SplineData` &data)=0
Called for every spline.
- virtual void `addControlPoint` (const `DL_ControlPointData` &data)=0
Called for every spline control point.
- virtual void `addFitPoint` (const `DL_FitPointData` &data)=0
Called for every spline fit point.
- virtual void `addKnot` (const `DL_KnotData` &data)=0
Called for every spline knot value.
- virtual void `addInsert` (const `DL_InsertData` &data)=0
Called for every insert.
- virtual void `addTrace` (const `DL_TraceData` &data)=0
Called for every trace start.
- virtual void `add3dFace` (const `DL_3dFaceData` &data)=0
Called for every 3dface start.
- virtual void `addSolid` (const `DL_SolidData` &data)=0

- Called for every solid start.*

 - virtual void `addMText` (const `DL_MTextData` &data)=0

Called for every multi Text entity.
- virtual void `addMTextChunk` (const std::string &text)=0

Called for additional text chunks for MTEXT entities.
- virtual void `addText` (const `DL_TextData` &data)=0

Called for every text entity.
- virtual void `addArcAlignedText` (const `DL_ArcAlignedTextData` &data)=0

Called for every arc aligned text entity.
- virtual void `addAttribute` (const `DL_AttributeData` &data)=0

Called for every block Attribute entity.
- virtual void `addDimAlign` (const `DL_DimensionData` &data, const `DL_DimAlignedData` &edata)=0

Called for every aligned dimension entity.
- virtual void `addDimLinear` (const `DL_DimensionData` &data, const `DL_DimLinearData` &edata)=0

Called for every linear or rotated dimension entity.
- virtual void `addDimRadial` (const `DL_DimensionData` &data, const `DL_DimRadialData` &edata)=0

Called for every radial dimension entity.
- virtual void `addDimDiametric` (const `DL_DimensionData` &data, const `DL_DimDiametricData` &edata)=0

Called for every diametric dimension entity.
- virtual void `addDimAngular` (const `DL_DimensionData` &data, const `DL_DimAngular2LData` &edata)=0

Called for every angular dimension (2 lines version) entity.
- virtual void `addDimAngular3P` (const `DL_DimensionData` &data, const `DL_DimAngular3PData` &edata)=0

Called for every angular dimension (3 points version) entity.
- virtual void `addDimOrdinate` (const `DL_DimensionData` &data, const `DL_DimOrdinateData` &edata)=0

Called for every ordinate dimension entity.
- virtual void `addLeader` (const `DL_LeaderData` &data)=0

Called for every leader start.
- virtual void `addLeaderVertex` (const `DL_LeaderVertexData` &data)=0

Called for every leader vertex.
- virtual void `addHatch` (const `DL_HatchData` &data)=0

Called for every hatch entity.
- virtual void `addImage` (const `DL_ImageData` &data)=0

Called for every image entity.
- virtual void `linkImage` (const `DL_ImageDefData` &data)=0

Called for every image definition.
- virtual void `addHatchLoop` (const `DL_HatchLoopData` &data)=0

Called for every hatch loop.
- virtual void `addHatchEdge` (const `DL_HatchEdgeData` &data)=0

Called for every hatch edge entity.
- virtual void `addXRecord` (const std::string &handle)=0

Called for every XRecord with the given handle.
- virtual void `addXRecordString` (int code, const std::string &value)=0

Called for XRecords of type string.
- virtual void `addXRecordReal` (int code, double value)=0

Called for XRecords of type double.
- virtual void `addXRecordInt` (int code, int value)=0

Called for XRecords of type int.
- virtual void `addXRecordBool` (int code, bool value)=0

Called for XRecords of type bool.
- virtual void `addXDataApp` (const std::string &appId)=0

Called for every beginning of an XData section of the given application.

- virtual void [addXDDataString](#) (int code, const std::string &value)=0
Called for XData tuples.
- virtual void [addXDDataReal](#) (int code, double value)=0
Called for XData tuples.
- virtual void [addXDDataInt](#) (int code, int value)=0
Called for XData tuples.
- virtual void [addDictionary](#) (const [DL_DictionaryData](#) &data)=0
Called for dictionary objects.
- virtual void [addDictionaryEntry](#) (const [DL_DictionaryEntryData](#) &data)=0
Called for dictionary entries.
- virtual void [endEntity](#) ()=0
Called after an entity has been completed.
- virtual void [addComment](#) (const std::string &comment)=0
Called for every comment in the DXF file (code 999).
- virtual void [setVariableVector](#) (const std::string &key, double v1, double v2, double v3, int code)=0
Called for every vector variable in the DXF file (e.g.
- virtual void [setVariableString](#) (const std::string &key, const std::string &value, int code)=0
Called for every string variable in the DXF file (e.g.
- virtual void [setVariableInt](#) (const std::string &key, int value, int code)=0
Called for every int variable in the DXF file (e.g.
- virtual void [setVariableDouble](#) (const std::string &key, double value, int code)=0
Called for every double variable in the DXF file (e.g.
- virtual void [endSequence](#) ()=0
Called when a SEQEND occurs (when a POLYLINE or ATTRIB is done)
- void [setAttributes](#) (const [DL_Attributes](#) &attrib)
Sets the current attributes for entities.
- [DL_Attributes](#) [getAttributes](#) ()
- void [setExtrusion](#) (double dx, double dy, double dz, double elevation)
Sets the current attributes for entities.
- [DL_Extrusion](#) * [getExtrusion](#) ()

Protected Attributes

- [DL_Attributes](#) **attributes**
- [DL_Extrusion](#) * **extrusion**

5.10.1 Detailed Description

Abstract class (interface) for the creation of new entities.

Inherit your class which takes care of the entities in the processed DXF file from this interface.

Double arrays passed to your implementation contain 3 double values for x, y, z coordinates unless stated differently.

Author

Andrew Mustun

5.10.2 Member Function Documentation

5.10.2.1 add3dFace()

```
virtual void DL_CreationInterface::add3dFace (  
    const DL_3dFaceData & data) [pure virtual]
```

Called for every 3dface start.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::add3dFace\(\)](#).

5.10.2.2 addArc()

```
virtual void DL_CreationInterface::addArc (  
    const DL_ArcData & data) [pure virtual]
```

Called for every arc.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addArc\(\)](#).

5.10.2.3 addArcAlignedText()

```
virtual void DL_CreationInterface::addArcAlignedText (  
    const DL_ArcAlignedTextData & data) [pure virtual]
```

Called for every arc aligned text entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addArcAlignedText\(\)](#).

5.10.2.4 addAttribute()

```
virtual void DL_CreationInterface::addAttribute (  
    const DL_AttributeData & data) [pure virtual]
```

Called for every block Attribute entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addAttribute\(\)](#).

5.10.2.5 addBlock()

```
virtual void DL_CreationInterface::addBlock (  
    const DL_BlockData & data) [pure virtual]
```

Called for every block.

Note: all entities added after this command go into this block until [endBlock\(\)](#) is called.

See also

[endBlock\(\)](#)

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addBlock\(\)](#).

5.10.2.6 addCircle()

```
virtual void DL_CreationInterface::addCircle (  
    const DL_CircleData & data) [pure virtual]
```

Called for every circle.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addCircle\(\)](#).

5.10.2.7 addComment()

```
virtual void DL_CreationInterface::addComment (  
    const std::string & comment) [pure virtual]
```

Called for every comment in the DXF file (code 999).

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addComment\(\)](#).

5.10.2.8 addControlPoint()

```
virtual void DL_CreationInterface::addControlPoint (  
    const DL_ControlPointData & data) [pure virtual]
```

Called for every spline control point.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addSpline\(\)](#).

5.10.2.9 addDictionary()

```
virtual void DL_CreationInterface::addDictionary (  
    const DL_DictionaryData & data) [pure virtual]
```

Called for dictionary objects.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::handleDictionaryData\(\)](#).

5.10.2.10 addDictionaryEntry()

```
virtual void DL_CreationInterface::addDictionaryEntry (  
    const DL_DictionaryEntryData & data) [pure virtual]
```

Called for dictionary entries.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::handleDictionaryData\(\)](#).

5.10.2.11 addDimAlign()

```
virtual void DL_CreationInterface::addDimAlign (  
    const DL_DimensionData & data,  
    const DL_DimAlignedData & edata) [pure virtual]
```

Called for every aligned dimension entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addDimAligned\(\)](#).

5.10.2.12 addDimAngular()

```
virtual void DL_CreationInterface::addDimAngular (  
    const DL_DimensionData & data,  
    const DL_DimAngular2LData & edata) [pure virtual]
```

Called for every angular dimension (2 lines version) entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addDimAngular\(\)](#).

5.10.2.13 addDimAngular3P()

```
virtual void DL_CreationInterface::addDimAngular3P (  
    const DL_DimensionData & data,  
    const DL_DimAngular3PData & edata) [pure virtual]
```

Called for every angular dimension (3 points version) entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addDimAngular3P\(\)](#).

5.10.2.14 addDimDiametric()

```
virtual void DL_CreationInterface::addDimDiametric (  
    const DL_DimensionData & data,  
    const DL_DimDiametricData & edata) [pure virtual]
```

Called for every diametric dimension entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addDimDiametric\(\)](#).

5.10.2.15 addDimLinear()

```
virtual void DL_CreationInterface::addDimLinear (  
    const DL_DimensionData & data,  
    const DL_DimLinearData & edata) [pure virtual]
```

Called for every linear or rotated dimension entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addDimLinear\(\)](#).

5.10.2.16 addDimOrdinate()

```
virtual void DL_CreationInterface::addDimOrdinate (  
    const DL_DimensionData & data,  
    const DL_DimOrdinateData & edata) [pure virtual]
```

Called for every ordinate dimension entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addDimOrdinate\(\)](#).

5.10.2.17 addDimRadial()

```
virtual void DL_CreationInterface::addDimRadial (
    const DL_DimensionData & data,
    const DL_DimRadialData & edata) [pure virtual]
```

Called for every radial dimension entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addDimRadial\(\)](#).

5.10.2.18 addEllipse()

```
virtual void DL_CreationInterface::addEllipse (
    const DL_EllipseData & data) [pure virtual]
```

Called for every ellipse.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addEllipse\(\)](#).

5.10.2.19 addFitPoint()

```
virtual void DL_CreationInterface::addFitPoint (
    const DL_FitPointData & data) [pure virtual]
```

Called for every spline fit point.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addSpline\(\)](#).

5.10.2.20 addHatch()

```
virtual void DL_CreationInterface::addHatch (
    const DL_HatchData & data) [pure virtual]
```

Called for every hatch entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addHatch\(\)](#).

5.10.2.21 addHatchEdge()

```
virtual void DL_CreationInterface::addHatchEdge (
    const DL_HatchEdgeData & data) [pure virtual]
```

Called for every hatch edge entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addHatch\(\)](#).

5.10.2.22 addHatchLoop()

```
virtual void DL_CreationInterface::addHatchLoop (  
    const DL_HatchLoopData & data) [pure virtual]
```

Called for every hatch loop.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addHatch\(\)](#).

5.10.2.23 addImage()

```
virtual void DL_CreationInterface::addImage (  
    const DL_ImageData & data) [pure virtual]
```

Called for every image entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addImage\(\)](#).

5.10.2.24 addInsert()

```
virtual void DL_CreationInterface::addInsert (  
    const DL_InsertData & data) [pure virtual]
```

Called for every insert.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addInsert\(\)](#).

5.10.2.25 addKnot()

```
virtual void DL_CreationInterface::addKnot (  
    const DL_KnotData & data) [pure virtual]
```

Called for every spline knot value.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addSpline\(\)](#).

5.10.2.26 addLayer()

```
virtual void DL_CreationInterface::addLayer (  
    const DL_LayerData & data) [pure virtual]
```

Called for every layer.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addLayer\(\)](#).

5.10.2.27 addLeader()

```
virtual void DL_CreationInterface::addLeader (
    const DL_LeaderData & data) [pure virtual]
```

Called for every leader start.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addLeader\(\)](#).

5.10.2.28 addLeaderVertex()

```
virtual void DL_CreationInterface::addLeaderVertex (
    const DL_LeaderVertexData & data) [pure virtual]
```

Called for every leader vertex.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addLeader\(\)](#).

5.10.2.29 addLine()

```
virtual void DL_CreationInterface::addLine (
    const DL_LineData & data) [pure virtual]
```

Called for every line.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addLine\(\)](#).

5.10.2.30 addLinetype()

```
virtual void DL_CreationInterface::addLinetype (
    const DL_LinetypeData & data) [pure virtual]
```

Called for every linetype.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addLinetype\(\)](#).

5.10.2.31 addLinetypeDash()

```
virtual void DL_CreationInterface::addLinetypeDash (
    double length) [pure virtual]
```

Called for every dash in linetype pattern.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::handleLinetypeData\(\)](#).

5.10.2.32 addMText()

```
virtual void DL_CreationInterface::addMText (
    const DL_MTextData & data) [pure virtual]
```

Called for every multi Text entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addMText\(\)](#).

5.10.2.33 addMTextChunk()

```
virtual void DL_CreationInterface::addMTextChunk (
    const std::string & text) [pure virtual]
```

Called for additional text chunks for MTEXT entities.

The chunks come at 250 character in size each. Note that those chunks come **before** the actual MTEXT entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::handleMTextData\(\)](#).

5.10.2.34 addPoint()

```
virtual void DL_CreationInterface::addPoint (
    const DL_PointData & data) [pure virtual]
```

Called for every point.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addPoint\(\)](#).

5.10.2.35 addPolyline()

```
virtual void DL_CreationInterface::addPolyline (
    const DL_PolylineData & data) [pure virtual]
```

Called for every polyline start.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addPolyline\(\)](#).

5.10.2.36 addRay()

```
virtual void DL_CreationInterface::addRay (
    const DL_RayData & data) [pure virtual]
```

Called for every ray.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addRay\(\)](#).

5.10.2.37 addSolid()

```
virtual void DL_CreationInterface::addSolid (  
    const DL_SolidData & data) [pure virtual]
```

Called for every solid start.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addSolid\(\)](#).

5.10.2.38 addSpline()

```
virtual void DL_CreationInterface::addSpline (  
    const DL_SplineData & data) [pure virtual]
```

Called for every spline.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addSpline\(\)](#).

5.10.2.39 addText()

```
virtual void DL_CreationInterface::addText (  
    const DL_TextData & data) [pure virtual]
```

Called for every text entity.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addText\(\)](#).

5.10.2.40 addTextStyle()

```
virtual void DL_CreationInterface::addTextStyle (  
    const DL_StyleData & data) [pure virtual]
```

Called for every text style.

Implemented in [DL_CreationAdapter](#).

5.10.2.41 addTrace()

```
virtual void DL_CreationInterface::addTrace (  
    const DL_TraceData & data) [pure virtual]
```

Called for every trace start.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addTrace\(\)](#).

5.10.2.42 addVertex()

```
virtual void DL_CreationInterface::addVertex (  
    const DL_VertexData & data) [pure virtual]
```

Called for every polyline vertex.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addPolyline\(\)](#), and [DL_Dxf::addVertex\(\)](#).

5.10.2.43 addXDataApp()

```
virtual void DL_CreationInterface::addXDataApp (  
    const std::string & appId) [pure virtual]
```

Called for every beginning of an XData section of the given application.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::handleXData\(\)](#).

5.10.2.44 addXDataInt()

```
virtual void DL_CreationInterface::addXDataInt (  
    int code,  
    int value) [pure virtual]
```

Called for XData tuples.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::handleXData\(\)](#).

5.10.2.45 addXDataReal()

```
virtual void DL_CreationInterface::addXDataReal (  
    int code,  
    double value) [pure virtual]
```

Called for XData tuples.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::handleXData\(\)](#).

5.10.2.46 addXDataString()

```
virtual void DL_CreationInterface::addXDataString (
    int code,
    const std::string & value) [pure virtual]
```

Called for XData tuples.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::handleXData\(\)](#).

5.10.2.47 addXLine()

```
virtual void DL_CreationInterface::addXLine (
    const DL_XLineData & data) [pure virtual]
```

Called for every xline.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addXLine\(\)](#).

5.10.2.48 addXRecord()

```
virtual void DL_CreationInterface::addXRecord (
    const std::string & handle) [pure virtual]
```

Called for every XRecord with the given handle.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::handleXRecordData\(\)](#).

5.10.2.49 addXRecordBool()

```
virtual void DL_CreationInterface::addXRecordBool (
    int code,
    bool value) [pure virtual]
```

Called for XRecords of type bool.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::handleXRecordData\(\)](#).

5.10.2.50 addXRecordInt()

```
virtual void DL_CreationInterface::addXRecordInt (
    int code,
    int value) [pure virtual]
```

Called for XRecords of type int.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::handleXRecordData\(\)](#).

5.10.2.51 addXRecordReal()

```
virtual void DL_CreationInterface::addXRecordReal (
    int code,
    double value) [pure virtual]
```

Called for XRecords of type double.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::handleXRecordData\(\)](#).

5.10.2.52 addXRecordString()

```
virtual void DL_CreationInterface::addXRecordString (
    int code,
    const std::string & value) [pure virtual]
```

Called for XRecords of type string.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::handleXRecordData\(\)](#).

5.10.2.53 endBlock()

```
virtual void DL_CreationInterface::endBlock () [pure virtual]
```

Called to end the current block.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::endBlock\(\)](#).

5.10.2.54 endEntity()

```
virtual void DL_CreationInterface::endEntity () [pure virtual]
```

Called after an entity has been completed.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addHatch\(\)](#), [DL_Dxf::addImage\(\)](#), [DL_Dxf::addImageDef\(\)](#), [DL_Dxf::addLeader\(\)](#), [DL_Dxf::addPolyline\(\)](#), [DL_Dxf::addSpline\(\)](#), and [DL_Dxf::endEntity\(\)](#).

5.10.2.55 endSection()

```
virtual void DL_CreationInterface::endSection () [pure virtual]
```

Called when a section (entity, table entry, etc.) is finished.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::processDXFGroup\(\)](#).

5.10.2.56 endSequence()

```
virtual void DL_CreationInterface::endSequence () [pure virtual]
```

Called when a SEQEND occurs (when a POLYLINE or ATTRIB is done)

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::endSequence\(\)](#).

5.10.2.57 getAttributes()

```
DL_Attributes DL_CreationInterface::getAttributes () [inline]
```

Returns

the current attributes used for new entities.

Referenced by [DL_Dxf::addLayer\(\)](#).

5.10.2.58 getExtrusion()

```
DL_Extrusion * DL_CreationInterface::getExtrusion () [inline]
```

Returns

the current attributes used for new entities.

5.10.2.59 linkImage()

```
virtual void DL_CreationInterface::linkImage (  
    const DL_ImageDefData & data) [pure virtual]
```

Called for every image definition.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addImageDef\(\)](#).

5.10.2.60 processCodeValuePair()

```
virtual void DL_CreationInterface::processCodeValuePair (  
    unsigned int groupCode,  
    const std::string & groupValue) [pure virtual]
```

Called for every code / value tuple of the DXF file.

The complete DXF file contents can be handled by the implementation of this function.

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::readDxfGroups\(\)](#).

5.10.2.61 setVariableDouble()

```
virtual void DL_CreationInterface::setVariableDouble (  
    const std::string & key,  
    double value,  
    int code) [pure virtual]
```

Called for every double variable in the DXF file (e.g.

"\$DIMEXO").

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addSetting\(\)](#).

5.10.2.62 setVariableInt()

```
virtual void DL_CreationInterface::setVariableInt (  
    const std::string & key,  
    int value,  
    int code) [pure virtual]
```

Called for every int variable in the DXF file (e.g.

"\$ACADMAINTVER").

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addSetting\(\)](#).

5.10.2.63 setVariableString()

```
virtual void DL_CreationInterface::setVariableString (  
    const std::string & key,  
    const std::string & value,  
    int code) [pure virtual]
```

Called for every string variable in the DXF file (e.g.

"\$ACADVER").

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addSetting\(\)](#).

5.10.2.64 setVariableVector()

```
virtual void DL_CreationInterface::setVariableVector (  
    const std::string & key,  
    double v1,  
    double v2,  
    double v3,  
    int code) [pure virtual]
```

Called for every vector variable in the DXF file (e.g.

"\$EXTMIN").

Implemented in [DL_CreationAdapter](#).

Referenced by [DL_Dxf::addSetting\(\)](#).

The documentation for this class was generated from the following file:

- [src/dl_creationinterface.h](#)

5.11 DL_DictionaryData Struct Reference

Dictionary data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_DictionaryData](#) (const std::string &handle)

Public Attributes

- std::string **handle**

5.11.1 Detailed Description

Dictionary data.

The documentation for this struct was generated from the following file:

- `src/dl_entities.h`

5.12 DL_DictionaryEntryData Struct Reference

Dictionary entry data.

```
#include <dl_entities.h>
```

Public Member Functions

- **DL_DictionaryEntryData** (const std::string &name, const std::string &handle)

Public Attributes

- std::string **name**
- std::string **handle**

5.12.1 Detailed Description

Dictionary entry data.

The documentation for this struct was generated from the following file:

- `src/dl_entities.h`

5.13 DL_DimAlignedData Struct Reference

Aligned Dimension Data.

```
#include <dl_entities.h>
```

Public Member Functions

- **DL_DimAlignedData** (double depx1, double depy1, double depz1, double depx2, double depy2, double depz2)

Constructor.

Public Attributes

- double [epx1](#)
- double [epy1](#)
- double [epz1](#)
- double [epx2](#)
- double [epy2](#)
- double [epz2](#)

5.13.1 Detailed Description

Aligned Dimension Data.

5.13.2 Constructor & Destructor Documentation

5.13.2.1 DL_DimAlignedData()

```
DL_DimAlignedData::DL_DimAlignedData (  
    double depx1,  
    double depy1,  
    double depz1,  
    double depx2,  
    double depy2,  
    double depz2) [inline]
```

Constructor.

Parameters: see member variables.

5.13.3 Member Data Documentation

5.13.3.1 epx1

```
double DL_DimAlignedData::epx1
```

X Coordinate of Extension point 1.

Referenced by [DL_Dxf::writeDimAligned\(\)](#).

5.13.3.2 epx2

```
double DL_DimAlignedData::epx2
```

X Coordinate of Extension point 2.

Referenced by [DL_Dxf::writeDimAligned\(\)](#).

5.13.3.3 epy1

```
double DL_DimAlignedData::epy1
```

Y Coordinate of Extension point 1.

Referenced by [DL_Dxf::writeDimAligned\(\)](#).

5.13.3.4 epy2

```
double DL_DimAlignedData::epy2
```

Y Coordinate of Extension point 2.

Referenced by [DL_Dxf::writeDimAligned\(\)](#).

5.13.3.5 epz1

```
double DL_DimAlignedData::epz1
```

Z Coordinate of Extension point 1.

5.13.3.6 epz2

```
double DL_DimAlignedData::epz2
```

Z Coordinate of Extension point 2.

The documentation for this struct was generated from the following file:

- [src/dl_entities.h](#)

5.14 DL_DimAngular2LData Struct Reference

Angular Dimension Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_DimAngular2LData](#) (double ddp_{x1}, double ddp_{y1}, double ddp_{z1}, double ddp_{x2}, double ddp_{y2}, double ddp_{z2}, double ddp_{x3}, double ddp_{y3}, double ddp_{z3}, double ddp_{x4}, double ddp_{y4}, double ddp_{z4})

Constructor.

Public Attributes

- double [dpx1](#)
- double [dpy1](#)
- double [dpz1](#)
- double [dpx2](#)
- double [dpy2](#)
- double [dpz2](#)
- double [dpx3](#)
- double [dpy3](#)
- double [dpz3](#)
- double [dpx4](#)
- double [dpy4](#)
- double [dpz4](#)

5.14.1 Detailed Description

Angular Dimension Data.

5.14.2 Constructor & Destructor Documentation

5.14.2.1 DL_DimAngular2LData()

```
DL_DimAngular2LData::DL_DimAngular2LData (  
    double ddpx1,  
    double ddpy1,  
    double ddpz1,  
    double ddpx2,  
    double ddpy2,  
    double ddpz2,  
    double ddpx3,  
    double ddpy3,  
    double ddpz3,  
    double ddpx4,  
    double ddpy4,  
    double ddpz4) [inline]
```

Constructor.

Parameters: see member variables.

5.14.3 Member Data Documentation

5.14.3.1 dpx1

```
double DL_DimAngular2LData::dpx1
```

X Coordinate of definition point 1.

Referenced by [DL_Dxf::writeDimAngular2L\(\)](#).

5.14.3.2 dpx2

```
double DL_DimAngular2LData::dpx2
```

X Coordinate of definition point 2.

Referenced by [DL_Dxf::writeDimAngular2L\(\)](#).

5.14.3.3 dpx3

```
double DL_DimAngular2LData::dpx3
```

X Coordinate of definition point 3.

Referenced by [DL_Dxf::writeDimAngular2L\(\)](#).

5.14.3.4 dpx4

```
double DL_DimAngular2LData::dpx4
```

X Coordinate of definition point 4.

Referenced by [DL_Dxf::writeDimAngular2L\(\)](#).

5.14.3.5 dpy1

```
double DL_DimAngular2LData::dpy1
```

Y Coordinate of definition point 1.

Referenced by [DL_Dxf::writeDimAngular2L\(\)](#).

5.14.3.6 dpy2

```
double DL_DimAngular2LData::dpy2
```

Y Coordinate of definition point 2.

Referenced by [DL_Dxf::writeDimAngular2L\(\)](#).

5.14.3.7 dpy3

```
double DL_DimAngular2LData::dpy3
```

Y Coordinate of definition point 3.

Referenced by [DL_Dxf::writeDimAngular2L\(\)](#).

Public Attributes

- double [dpx1](#)
- double [dpy1](#)
- double [dpz1](#)
- double [dpx2](#)
- double [dpy2](#)
- double [dpz2](#)
- double [dpx3](#)
- double [dpy3](#)
- double [dpz3](#)

5.15.1 Detailed Description

Angular Dimension Data (3 points version).

5.15.2 Constructor & Destructor Documentation

5.15.2.1 DL_DimAngular3PData()

```
DL_DimAngular3PData::DL_DimAngular3PData (  
    double ddpx1,  
    double ddpy1,  
    double ddpz1,  
    double ddpx2,  
    double ddpy2,  
    double ddpz2,  
    double ddpx3,  
    double ddpy3,  
    double ddpz3) [inline]
```

Constructor.

Parameters: see member variables.

5.15.3 Member Data Documentation

5.15.3.1 dpx1

```
double DL_DimAngular3PData::dpx1
```

X Coordinate of definition point 1 (extension line 1 end).

Referenced by [DL_Dxf::writeDimAngular3P\(\)](#).

5.15.3.2 dpx2

```
double DL_DimAngular3PData::dpx2
```

X Coordinate of definition point 2 (extension line 2 end).

Referenced by [DL_Dxf::writeDimAngular3P\(\)](#).

5.15.3.3 dpx3

```
double DL_DimAngular3PData::dpx3
```

X Coordinate of definition point 3 (center).

Referenced by [DL_Dxf::writeDimAngular3P\(\)](#).

5.15.3.4 dpy1

```
double DL_DimAngular3PData::dpy1
```

Y Coordinate of definition point 1.

Referenced by [DL_Dxf::writeDimAngular3P\(\)](#).

5.15.3.5 dpy2

```
double DL_DimAngular3PData::dpy2
```

Y Coordinate of definition point 2.

Referenced by [DL_Dxf::writeDimAngular3P\(\)](#).

5.15.3.6 dpy3

```
double DL_DimAngular3PData::dpy3
```

Y Coordinate of definition point 3.

Referenced by [DL_Dxf::writeDimAngular3P\(\)](#).

5.15.3.7 dpz1

```
double DL_DimAngular3PData::dpz1
```

Z Coordinate of definition point 1.

5.15.3.8 dpz2

```
double DL_DimAngular3PData::dpz2
```

Z Coordinate of definition point 2.

5.15.3.9 dpz3

```
double DL_DimAngular3PData::dpz3
```

Z Coordinate of definition point 3.

The documentation for this struct was generated from the following file:

- src/dl_entities.h

5.16 DL_DimDiametricData Struct Reference

Diametric Dimension Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_DimDiametricData](#) (double ddp_x, double ddp_y, double ddp_z, double dleader)
Constructor.

Public Attributes

- double [dpx](#)
- double [dpy](#)
- double [dpz](#)
- double [leader](#)

5.16.1 Detailed Description

Diametric Dimension Data.

5.16.2 Constructor & Destructor Documentation

5.16.2.1 DL_DimDiametricData()

```
DL_DimDiametricData::DL_DimDiametricData (  
    double ddpx,  
    double ddpy,  
    double ddpz,  
    double dleader) [inline]
```

Constructor.

Parameters: see member variables.

5.16.3 Member Data Documentation

5.16.3.1 dpx

```
double DL_DimDiametricData::dpx
```

X Coordinate of definition point (DXF 15).

Referenced by [DL_Dxf::writeDimDiametric\(\)](#).

5.16.3.2 dpy

```
double DL_DimDiametricData::dpy
```

Y Coordinate of definition point (DXF 25).

Referenced by [DL_Dxf::writeDimDiametric\(\)](#).

5.16.3.3 dpz

```
double DL_DimDiametricData::dpz
```

Z Coordinate of definition point (DXF 35).

5.16.3.4 leader

```
double DL_DimDiametricData::leader
```

Leader length

Referenced by [DL_Dxf::writeDimDiametric\(\)](#).

The documentation for this struct was generated from the following file:

- `src/dl_entities.h`

5.17 DL_DimensionData Struct Reference

Generic Dimension Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_DimensionData](#) (double `dpx`, double `dpy`, double `dpz`, double `mpx`, double `mpy`, double `mpz`, int `type`, int `attachmentPoint`, int `lineSpacingStyle`, double `lineSpacingFactor`, const std::string &`text`, const std::string &`style`, double `angle`, double `linearFactor`=1.0, double `dimScale`=1.0)

Constructor.

Public Attributes

- double `dpx`
- double `dpy`
- double `dpz`
- double `mpx`
- double `mpy`
- double `mpz`
- int `type`
Dimension type.
- int `attachmentPoint`
Attachment point.
- int `lineSpacingStyle`
Line spacing style.
- double `lineSpacingFactor`
Line spacing factor.
- `std::string` `text`
Text string.
- `std::string` `style`
- double `angle`
Rotation angle of dimension text away from default orientation.
- double `linearFactor`
Linear factor style override.
- double `dimScale`
Dimension scale (dimscale) style override.
- bool `arrow1Flipped`
- bool `arrow2Flipped`

5.17.1 Detailed Description

Generic Dimension Data.

5.17.2 Constructor & Destructor Documentation**5.17.2.1 DL_DimensionData()**

```
DL_DimensionData::DL_DimensionData (
    double dpx,
    double dpy,
    double dpz,
    double mpx,
    double mpy,
    double mpz,
    int type,
    int attachmentPoint,
    int lineSpacingStyle,
    double lineSpacingFactor,
    const std::string & text,
    const std::string & style,
    double angle,
    double linearFactor = 1.0,
    double dimScale = 1.0) [inline]
```

Constructor.

Parameters: see member variables.

5.17.3 Member Data Documentation

5.17.3.1 attachmentPoint

```
int DL_DimensionData::attachmentPoint
```

Attachment point.

1 = Top left, 2 = Top center, 3 = Top right, 4 = Middle left, 5 = Middle center, 6 = Middle right, 7 = Bottom left, 8 = Bottom center, 9 = Bottom right,

Referenced by [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), and [DL_Dxf::writeDimRadial\(\)](#).

5.17.3.2 dpx

```
double DL_DimensionData::dpx
```

X Coordinate of definition point.

Referenced by [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), and [DL_Dxf::writeDimRadial\(\)](#).

5.17.3.3 dpy

```
double DL_DimensionData::dpy
```

Y Coordinate of definition point.

Referenced by [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), and [DL_Dxf::writeDimRadial\(\)](#).

5.17.3.4 dpz

```
double DL_DimensionData::dpz
```

Z Coordinate of definition point.

Referenced by [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), and [DL_Dxf::writeDimRadial\(\)](#).

5.17.3.5 lineSpacingFactor

```
double DL_DimensionData::lineSpacingFactor
```

Line spacing factor.

0.25 .. 4.0

Referenced by [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), and [DL_Dxf::writeDimRadial\(\)](#).

5.17.3.6 lineSpacingStyle

```
int DL_DimensionData::lineSpacingStyle
```

Line spacing style.

1 = at least, 2 = exact

Referenced by [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), and [DL_Dxf::writeDimRadial\(\)](#).

5.17.3.7 mpx

```
double DL_DimensionData::mpx
```

X Coordinate of middle point of the text.

Referenced by [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), and [DL_Dxf::writeDimRadial\(\)](#).

5.17.3.8 mpy

```
double DL_DimensionData::mpy
```

Y Coordinate of middle point of the text.

Referenced by [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), and [DL_Dxf::writeDimRadial\(\)](#).

5.17.3.9 mpz

```
double DL_DimensionData::mpz
```

Z Coordinate of middle point of the text.

5.17.3.10 style

```
std::string DL_DimensionData::style
```

Dimension style (font name).

5.17.3.11 text

```
std::string DL_DimensionData::text
```

Text string.

Text string entered explicitly by user or null or "<>" for the actual measurement or " " (one blank space). for supressing the text.

Referenced by [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), and [DL_Dxf::writeDimRadial\(\)](#).

5.17.3.12 type

```
int DL_DimensionData::type
```

Dimension type.

0 Rotated, horizontal, or vertical

1 Aligned

2 Angular

3 Diametric

4 Radius

5 Angular 3-point

6 Ordinate

64 Ordinate type. This is a bit value (bit 7)

used only with integer value 6. If set,

ordinate is X-type; if not set, ordinate is Y-type

128 This is a bit value (bit 8) added to the

other group 70 values if the dimension text has been positioned at a user-defined location rather than at the default location

Referenced by [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), and [DL_Dxf::writeDimRadial\(\)](#).

The documentation for this struct was generated from the following file:

- [src/dl_entities.h](#)

5.18 DL_DimLinearData Struct Reference

Linear (rotated) Dimension Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_DimLinearData](#) (double ddp_x1, double ddp_y1, double ddp_z1, double ddp_x2, double ddp_y2, double ddp_z2, double dAngle, double dOblique)

Constructor.

Public Attributes

- double [dpx1](#)
- double [dpy1](#)
- double [dpz1](#)
- double [dpx2](#)
- double [dpy2](#)
- double [dpz2](#)
- double [angle](#)
- double [oblique](#)

5.18.1 Detailed Description

Linear (rotated) Dimension Data.

5.18.2 Constructor & Destructor Documentation

5.18.2.1 DL_DimLinearData()

```
DL_DimLinearData::DL_DimLinearData (  
    double ddpx1,  
    double ddpy1,  
    double ddpz1,  
    double ddpx2,  
    double ddpy2,  
    double ddpz2,  
    double dAngle,  
    double dOblique) [inline]
```

Constructor.

Parameters: see member variables.

5.18.3 Member Data Documentation

5.18.3.1 angle

```
double DL_DimLinearData::angle
```

Rotation angle (angle of dimension line) in degrees.

Referenced by [DL_Dxf::writeDimLinear\(\)](#).

5.18.3.2 dpx1

```
double DL_DimLinearData::dpx1
```

X Coordinate of Extension point 1.

Referenced by [DL_Dxf::writeDimLinear\(\)](#).

5.18.3.3 dpx2

```
double DL_DimLinearData::dpx2
```

X Coordinate of Extension point 2.

Referenced by [DL_Dxf::writeDimLinear\(\)](#).

5.18.3.4 dpy1

```
double DL_DimLinearData::dpy1
```

Y Coordinate of Extension point 1.

Referenced by [DL_Dxf::writeDimLinear\(\)](#).

5.18.3.5 dpy2

```
double DL_DimLinearData::dpy2
```

Y Coordinate of Extension point 2.

Referenced by [DL_Dxf::writeDimLinear\(\)](#).

5.18.3.6 dpz1

```
double DL_DimLinearData::dpz1
```

Z Coordinate of Extension point 1.

5.18.3.7 dpz2

```
double DL_DimLinearData::dpz2
```

Z Coordinate of Extension point 2.

5.18.3.8 oblique

```
double DL_DimLinearData::oblique
```

Oblique angle in degrees.

The documentation for this struct was generated from the following file:

- [src/dl_entities.h](#)

5.19 DL_DimOrdinateData Struct Reference

Ordinate Dimension Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_DimOrdinateData](#) (double ddp_x1, double ddp_y1, double ddp_z1, double ddp_x2, double ddp_y2, double ddp_z2, bool dxtype)

Constructor.

Public Attributes

- double [dpx1](#)
- double [dpy1](#)
- double [dpz1](#)
- double [dpx2](#)
- double [dpy2](#)
- double [dpz2](#)
- bool [xtype](#)

5.19.1 Detailed Description

Ordinate Dimension Data.

5.19.2 Constructor & Destructor Documentation

5.19.2.1 DL_DimOrdinateData()

```
DL_DimOrdinateData::DL_DimOrdinateData (  
    double ddpx1,  
    double ddpy1,  
    double ddpz1,  
    double ddpx2,  
    double ddpy2,  
    double ddpz2,  
    bool dxtype) [inline]
```

Constructor.

Parameters: see member variables.

5.19.3 Member Data Documentation

5.19.3.1 dpx1

```
double DL_DimOrdinateData::dpx1
```

X Coordinate of definition point 1.

Referenced by [DL_Dxf::writeDimOrdinate\(\)](#).

5.19.3.2 dpx2

```
double DL_DimOrdinateData::dpx2
```

X Coordinate of definition point 2.

Referenced by [DL_Dxf::writeDimOrdinate\(\)](#).

5.19.3.3 dpy1

```
double DL_DimOrdinateData::dpy1
```

Y Coordinate of definition point 1.

Referenced by [DL_Dxf::writeDimOrdinate\(\)](#).

5.19.3.4 dpy2

```
double DL_DimOrdinateData::dpy2
```

Y Coordinate of definition point 2.

Referenced by [DL_Dxf::writeDimOrdinate\(\)](#).

5.19.3.5 dpz1

```
double DL_DimOrdinateData::dpz1
```

Z Coordinate of definition point 1.

5.19.3.6 dpz2

```
double DL_DimOrdinateData::dpz2
```

Z Coordinate of definition point 2.

5.19.3.7 xtype

```
bool DL_DimOrdinateData::xtype
```

True if the dimension indicates the X-value, false for Y-value

Referenced by [DL_Dxf::writeDimOrdinate\(\)](#).

The documentation for this struct was generated from the following file:

- `src/dl_entities.h`

5.20 DL_DimRadialData Struct Reference

Radial Dimension Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_DimRadialData](#) (double ddp_x, double ddp_y, double ddp_z, double dleader)
Constructor.

Public Attributes

- double [dpx](#)
- double [dpy](#)
- double [dpz](#)
- double [leader](#)

5.20.1 Detailed Description

Radial Dimension Data.

5.20.2 Constructor & Destructor Documentation

5.20.2.1 DL_DimRadialData()

```
DL_DimRadialData::DL_DimRadialData (
    double ddpx,
    double ddpy,
    double ddpz,
    double dleader) [inline]
```

Constructor.

Parameters: see member variables.

5.20.3 Member Data Documentation

5.20.3.1 dpx

```
double DL_DimRadialData::dpx
```

X Coordinate of definition point.

Referenced by [DL_Dxf::writeDimRadial\(\)](#).

5.20.3.2 dpy

```
double DL_DimRadialData::dpy
```

Y Coordinate of definition point.

Referenced by [DL_Dxf::writeDimRadial\(\)](#).

5.20.3.3 dpz

```
double DL_DimRadialData::dpz
```

Z Coordinate of definition point.

5.20.3.4 leader

```
double DL_DimRadialData::leader
```

Leader length

Referenced by [DL_Dxf::writeDimRadial\(\)](#).

The documentation for this struct was generated from the following file:

- `src/dl_entities.h`

5.21 DL_Dxf Class Reference

Reading and writing of DXF files.

```
#include <dl_dxf.h>
```

Public Member Functions

- **DL_Dxf** ()
Default constructor.
- **~DL_Dxf** ()
Destructor.
- **bool in** (const std::string &file, [DL_CreationInterface](#) *creationInterface)
Reads the given file and calls the appropriate functions in the given creation interface for every entity found in the file.
- **bool readDxfGroups** (FILE *fp, [DL_CreationInterface](#) *creationInterface)
Reads a group couplet from a DXF file.
- **bool readDxfGroups** (std::istream &stream, [DL_CreationInterface](#) *creationInterface)
Same as above but for input streams.
- **bool in** (std::istream &stream, [DL_CreationInterface](#) *creationInterface)
Reads a DXF file from an existing stream.
- **bool processDXFGroup** ([DL_CreationInterface](#) *creationInterface, int groupCode, const std::string &group↵
Value)

- Processes a group (pair of group code and value).*
- void **addSetting** ([DL_CreationInterface](#) *creationInterface)
Adds a variable from the DXF file.
 - void **addLayer** ([DL_CreationInterface](#) *creationInterface)
Adds a layer that was read from the file via the creation interface.
 - void **addLinetype** ([DL_CreationInterface](#) *creationInterface)
Adds a linetype that was read from the file via the creation interface.
 - void **addBlock** ([DL_CreationInterface](#) *creationInterface)
Adds a block that was read from the file via the creation interface.
 - void **endBlock** ([DL_CreationInterface](#) *creationInterface)
Ends a block that was read from the file via the creation interface.
 - void **addTextStyle** ([DL_CreationInterface](#) *creationInterface)
 - void **addPoint** ([DL_CreationInterface](#) *creationInterface)
Adds a point entity that was read from the file via the creation interface.
 - void **addLine** ([DL_CreationInterface](#) *creationInterface)
Adds a line entity that was read from the file via the creation interface.
 - void **addXLine** ([DL_CreationInterface](#) *creationInterface)
Adds an xline entity that was read from the file via the creation interface.
 - void **addRay** ([DL_CreationInterface](#) *creationInterface)
Adds a ray entity that was read from the file via the creation interface.
 - void **addPolyline** ([DL_CreationInterface](#) *creationInterface)
Adds a polyline entity that was read from the file via the creation interface.
 - void **addVertex** ([DL_CreationInterface](#) *creationInterface)
Adds a polyline vertex entity that was read from the file via the creation interface.
 - void **addSpline** ([DL_CreationInterface](#) *creationInterface)
Adds a spline entity that was read from the file via the creation interface.
 - void **addArc** ([DL_CreationInterface](#) *creationInterface)
Adds an arc entity that was read from the file via the creation interface.
 - void **addCircle** ([DL_CreationInterface](#) *creationInterface)
Adds a circle entity that was read from the file via the creation interface.
 - void **addEllipse** ([DL_CreationInterface](#) *creationInterface)
Adds an ellipse entity that was read from the file via the creation interface.
 - void **addInsert** ([DL_CreationInterface](#) *creationInterface)
Adds an insert entity that was read from the file via the creation interface.
 - void **addTrace** ([DL_CreationInterface](#) *creationInterface)
Adds a trace entity (4 edge closed polyline) that was read from the file via the creation interface.
 - void **add3dFace** ([DL_CreationInterface](#) *creationInterface)
Adds a 3dface entity that was read from the file via the creation interface.
 - void **addSolid** ([DL_CreationInterface](#) *creationInterface)
Adds a solid entity (filled trace) that was read from the file via the creation interface.
 - void **addMText** ([DL_CreationInterface](#) *creationInterface)
Adds an MText entity that was read from the file via the creation interface.
 - void **addText** ([DL_CreationInterface](#) *creationInterface)
Adds an text entity that was read from the file via the creation interface.
 - void **addArcAlignedText** ([DL_CreationInterface](#) *creationInterface)
Adds an arc aligned text entity that was read from the file via the creation interface.
 - void **addAttribute** ([DL_CreationInterface](#) *creationInterface)
Adds an attrib entity that was read from the file via the creation interface.
 - [DL_DimensionData](#) **getDimData** ()
 - void **addDimLinear** ([DL_CreationInterface](#) *creationInterface)
Adds a linear dimension entity that was read from the file via the creation interface.

- void **addDimAligned** ([DL_CreationInterface](#) *creationInterface)
Adds an aligned dimension entity that was read from the file via the creation interface.
- void **addDimRadial** ([DL_CreationInterface](#) *creationInterface)
Adds a radial dimension entity that was read from the file via the creation interface.
- void **addDimDiametric** ([DL_CreationInterface](#) *creationInterface)
Adds a diametric dimension entity that was read from the file via the creation interface.
- void **addDimAngular** ([DL_CreationInterface](#) *creationInterface)
Adds an angular dimension entity that was read from the file via the creation interface.
- void **addDimAngular3P** ([DL_CreationInterface](#) *creationInterface)
Adds an angular dimension entity that was read from the file via the creation interface.
- void **addDimOrdinate** ([DL_CreationInterface](#) *creationInterface)
Adds an ordinate dimension entity that was read from the file via the creation interface.
- void **addLeader** ([DL_CreationInterface](#) *creationInterface)
Adds a leader entity that was read from the file via the creation interface.
- void **addHatch** ([DL_CreationInterface](#) *creationInterface)
Adds a hatch entity that was read from the file via the creation interface.
- void **addHatchLoop** ()
- void **addHatchEdge** ()
- bool **handleHatchData** ([DL_CreationInterface](#) *creationInterface)
Handles all hatch data.
- void **addImage** ([DL_CreationInterface](#) *creationInterface)
Adds an image entity that was read from the file via the creation interface.
- void **addImageDef** ([DL_CreationInterface](#) *creationInterface)
Adds an image definition that was read from the file via the creation interface.
- void **addComment** ([DL_CreationInterface](#) *creationInterface, const std::string &comment)
Adds a comment from the DXF file.
- void **addDictionary** ([DL_CreationInterface](#) *creationInterface)
- void **addDictionaryEntry** ([DL_CreationInterface](#) *creationInterface)
- bool **handleXRecordData** ([DL_CreationInterface](#) *creationInterface)
Handles all XRecord data.
- bool **handleDictionaryData** ([DL_CreationInterface](#) *creationInterface)
Handles all dictionary data.
- bool **handleXData** ([DL_CreationInterface](#) *creationInterface)
Handles XData for all object types.
- bool **handleMTextData** ([DL_CreationInterface](#) *creationInterface)
Handles additional MText data.
- bool **handleLWPolylineData** ([DL_CreationInterface](#) *creationInterface)
Handles additional polyline data.
- bool **handleSplineData** ([DL_CreationInterface](#) *creationInterface)
Handles additional spline data.
- bool **handleLeaderData** ([DL_CreationInterface](#) *creationInterface)
Handles additional leader data.
- bool **handleLinetypeData** ([DL_CreationInterface](#) *creationInterface)
Handles all dashes in linetype pattern.
- void **endEntity** ([DL_CreationInterface](#) *creationInterface)
Ends some special entities like hatches or old style polylines.
- void **endSequence** ([DL_CreationInterface](#) *creationInterface)
Ends a sequence and notifies the creation interface.
- [DL_WriterA](#) * out (const char *file, [DL_Codes::version](#) version=DL_VERSION_2000)
Converts the given string into an int.
- void **writeHeader** ([DL_WriterA](#) &dw)

- Writes a DXF header to the file currently opened by the given DXF writer object.*

 - void [writePoint](#) ([DL_WriterA](#) &dw, const [DL_PointData](#) &data, const [DL_Attributes](#) &attrib)

Writes a point entity to the file.
- void [writeLine](#) ([DL_WriterA](#) &dw, const [DL_LineData](#) &data, const [DL_Attributes](#) &attrib)

Writes a line entity to the file.
- void [writeXLine](#) ([DL_WriterA](#) &dw, const [DL_XLineData](#) &data, const [DL_Attributes](#) &attrib)

Writes an x line entity to the file.
- void [writeRay](#) ([DL_WriterA](#) &dw, const [DL_RayData](#) &data, const [DL_Attributes](#) &attrib)

Writes a ray entity to the file.
- void [writePolyline](#) ([DL_WriterA](#) &dw, const [DL_PolylineData](#) &data, const [DL_Attributes](#) &attrib)

Writes a polyline entity to the file.
- void [writeVertex](#) ([DL_WriterA](#) &dw, const [DL_VertexData](#) &data)

Writes a single vertex of a polyline to the file.
- void [writePolylineEnd](#) ([DL_WriterA](#) &dw)

Writes the polyline end.
- void [writeSpline](#) ([DL_WriterA](#) &dw, const [DL_SplineData](#) &data, const [DL_Attributes](#) &attrib)

Writes a spline entity to the file.
- void [writeControlPoint](#) ([DL_WriterA](#) &dw, const [DL_ControlPointData](#) &data)

Writes a single control point of a spline to the file.
- void [writeFitPoint](#) ([DL_WriterA](#) &dw, const [DL_FitPointData](#) &data)

Writes a single fit point of a spline to the file.
- void [writeKnot](#) ([DL_WriterA](#) &dw, const [DL_KnotData](#) &data)

Writes a single knot of a spline to the file.
- void [writeCircle](#) ([DL_WriterA](#) &dw, const [DL_CircleData](#) &data, const [DL_Attributes](#) &attrib)

Writes a circle entity to the file.
- void [writeArc](#) ([DL_WriterA](#) &dw, const [DL_ArcData](#) &data, const [DL_Attributes](#) &attrib)

Writes an arc entity to the file.
- void [writeEllipse](#) ([DL_WriterA](#) &dw, const [DL_EllipseData](#) &data, const [DL_Attributes](#) &attrib)

Writes an ellipse entity to the file.
- void [writeSolid](#) ([DL_WriterA](#) &dw, const [DL_SolidData](#) &data, const [DL_Attributes](#) &attrib)

Writes a solid entity to the file.
- void [writeTrace](#) ([DL_WriterA](#) &dw, const [DL_TraceData](#) &data, const [DL_Attributes](#) &attrib)

Writes a trace entity to the file.
- void [write3dFace](#) ([DL_WriterA](#) &dw, const [DL_3dFaceData](#) &data, const [DL_Attributes](#) &attrib)

Writes a 3d face entity to the file.
- void [writeInsert](#) ([DL_WriterA](#) &dw, const [DL_InsertData](#) &data, const [DL_Attributes](#) &attrib)

Writes an insert to the file.
- void [writeMText](#) ([DL_WriterA](#) &dw, const [DL_MTextData](#) &data, const [DL_Attributes](#) &attrib)

Writes a multi text entity to the file.
- void [writeText](#) ([DL_WriterA](#) &dw, const [DL_TextData](#) &data, const [DL_Attributes](#) &attrib)

Writes a text entity to the file.
- void **writeAttribute** ([DL_WriterA](#) &dw, const [DL_AttributeData](#) &data, const [DL_Attributes](#) &attrib)
- void **writeDimStyleOverrides** ([DL_WriterA](#) &dw, const [DL_DimensionData](#) &data)
- void [writeDimAligned](#) ([DL_WriterA](#) &dw, const [DL_DimensionData](#) &data, const [DL_DimAlignedData](#) &edata, const [DL_Attributes](#) &attrib)

Writes an aligned dimension entity to the file.
- void [writeDimLinear](#) ([DL_WriterA](#) &dw, const [DL_DimensionData](#) &data, const [DL_DimLinearData](#) &edata, const [DL_Attributes](#) &attrib)

Writes a linear dimension entity to the file.
- void [writeDimRadial](#) ([DL_WriterA](#) &dw, const [DL_DimensionData](#) &data, const [DL_DimRadialData](#) &edata, const [DL_Attributes](#) &attrib)

- Writes a radial dimension entity to the file.*

 - void `writeDimDiametric` (`DL_WriterA` &dw, const `DL_DimensionData` &data, const `DL_DimDiametricData` &edata, const `DL_Attributes` &attrib)
- Writes a diametric dimension entity to the file.*

 - void `writeDimAngular2L` (`DL_WriterA` &dw, const `DL_DimensionData` &data, const `DL_DimAngular2LData` &edata, const `DL_Attributes` &attrib)
- Writes an angular dimension entity to the file.*

 - void `writeDimAngular3P` (`DL_WriterA` &dw, const `DL_DimensionData` &data, const `DL_DimAngular3PData` &edata, const `DL_Attributes` &attrib)
- Writes an angular dimension entity (3 points version) to the file.*

 - void `writeDimOrdinate` (`DL_WriterA` &dw, const `DL_DimensionData` &data, const `DL_DimOrdinateData` &edata, const `DL_Attributes` &attrib)
- Writes an ordinate dimension entity to the file.*

 - void `writeLeader` (`DL_WriterA` &dw, const `DL_LeaderData` &data, const `DL_Attributes` &attrib)
- Writes a leader entity to the file.*

 - void `writeLeaderVertex` (`DL_WriterA` &dw, const `DL_LeaderVertexData` &data)
- Writes a single vertex of a leader to the file.*

 - void `writeLeaderEnd` (`DL_WriterA` &dw, const `DL_LeaderData` &data)
- void `writeHatch1` (`DL_WriterA` &dw, const `DL_HatchData` &data, const `DL_Attributes` &attrib)

Writes the beginning of a hatch entity to the file.
- void `writeHatch2` (`DL_WriterA` &dw, const `DL_HatchData` &data, const `DL_Attributes` &attrib)

Writes the end of a hatch entity to the file.
- void `writeHatchLoop1` (`DL_WriterA` &dw, const `DL_HatchLoopData` &data)

Writes the beginning of a hatch loop to the file.
- void `writeHatchLoop2` (`DL_WriterA` &dw, const `DL_HatchLoopData` &data)

Writes the end of a hatch loop to the file.
- void `writeHatchEdge` (`DL_WriterA` &dw, const `DL_HatchEdgeData` &data)

Writes the beginning of a hatch entity to the file.
- unsigned long `writelnImage` (`DL_WriterA` &dw, const `DL_ImageData` &data, const `DL_Attributes` &attrib)

Writes an image entity.
- void `writelnImageDef` (`DL_WriterA` &dw, int handle, const `DL_ImageData` &data)

Writes an image definition entity.
- void `writeLayer` (`DL_WriterA` &dw, const `DL_LayerData` &data, const `DL_Attributes` &attrib)

Writes a layer to the file.
- void `writeLinetype` (`DL_WriterA` &dw, const `DL_LinetypeData` &data)

Writes a line type to the file.
- void `writeAppid` (`DL_WriterA` &dw, const std::string &name)

Writes the APPID section to the DXF file.
- void `writeBlock` (`DL_WriterA` &dw, const `DL_BlockData` &data)

Writes a block's definition (no entities) to the DXF file.
- void `writeEndBlock` (`DL_WriterA` &dw, const std::string &name)

Writes a block end.
- void `writeVPort` (`DL_WriterA` &dw)

Writes a viewport section.
- void `writeStyle` (`DL_WriterA` &dw, const `DL_StyleData` &style)

Writes a style section.
- void `writeView` (`DL_WriterA` &dw)

Writes a view section.
- void `writeUcs` (`DL_WriterA` &dw)

Writes a ucs section.
- void `writeDimStyle` (`DL_WriterA` &dw, double dimasz, double dimexe, double dimexo, double dimgap, double dimtxt)

- Writes a dimstyle section.*

 - void `writeBlockRecord` (`DL_WriterA` &dw)

Writes a blockrecord section.

 - void `writeBlockRecord` (`DL_WriterA` &dw, const std::string &name)

Writes a single block record with the given name.

 - void `writeObjects` (`DL_WriterA` &dw, const std::string &appDictionaryName="")

Writes a objects section.

 - void `writeAppDictionary` (`DL_WriterA` &dw)
 - unsigned long `writeDictionaryEntry` (`DL_WriterA` &dw, const std::string &name)
 - void `writeXRecord` (`DL_WriterA` &dw, int handle, int value)
 - void `writeXRecord` (`DL_WriterA` &dw, int handle, double value)
 - void `writeXRecord` (`DL_WriterA` &dw, int handle, bool value)
 - void `writeXRecord` (`DL_WriterA` &dw, int handle, const std::string &value)
 - void `writeObjectsEnd` (`DL_WriterA` &dw)

Writes the end of the objects section.

 - void `writeComment` (`DL_WriterA` &dw, const std::string &comment)

Writes a comment to the DXF file.

 - `DL_Codes::version` `getVersion` ()
 - int `getLibVersion` (const std::string &str)
 - bool `hasValue` (int code)
 - int `getIntValue` (int code, int def)
 - int `toInt` (const std::string &str)
 - int `getInt16Value` (int code, int def)
 - int `toInt16` (const std::string &str)
 - bool `toBool` (const std::string &str)
 - std::string `getStringValue` (int code, const std::string &def)
 - double `getRealValue` (int code, double def)
 - double `toReal` (const std::string &str)

Static Public Member Functions

- static bool `getStrippedLine` (std::string &s, unsigned int size, FILE *stream, bool stripSpace=true)
 - Reads line from file & strips whitespace at start and newline at end.*
- static bool `getStrippedLine` (std::string &s, unsigned int size, std::istream &stream, bool stripSpace=true)
 - Same as above but for input streams.*
- static bool `stripWhiteSpace` (char **s, bool stripSpaces=true)
 - Strips leading whitespace and trailing Carriage Return (CR) and Line Feed (LF) from NULL terminated string.*
- static bool `checkVariable` (const char *var, `DL_Codes::version` version)
 - Converts the given string into a double or returns the given default valud (def) if value is NULL or empty.*
- static void `test` ()
 - Converts the given string into a double or returns the given default valud (def) if value is NULL or empty.*

5.21.1 Detailed Description

Reading and writing of DXF files.

This class can read in a DXF file and calls methods from the interface `DL_EntityContainer` to add the entities to the container provided by the user of the library.

It can also be used to write DXF files to a certain extent.

When saving entities, special values for colors and linetypes can be used:

Special colors are 0 (=BYBLOCK) and 256 (=BYLAYER). Special linetypes are "BYLAYER" and "BYBLOCK".

Author

Andrew Mustun

5.21.2 Member Function Documentation

5.21.2.1 addAttribute()

```
void DL_Dxf::addAttribute (
    DL_CreationInterface * creationInterface)
```

Adds an attrib entity that was read from the file via the creation interface.

Todo add attrib instead of normal text

References [DL_CreationInterface::addAttribute\(\)](#).

Referenced by [processDXFGroup\(\)](#).

5.21.2.2 addSolid()

```
void DL_Dxf::addSolid (
    DL_CreationInterface * creationInterface)
```

Adds a solid entity (filled trace) that was read from the file via the creation interface.

Author

AHM

References [DL_CreationInterface::addSolid\(\)](#), and [DL_TraceData::x](#).

Referenced by [processDXFGroup\(\)](#).

5.21.2.3 addTrace()

```
void DL_Dxf::addTrace (
    DL_CreationInterface * creationInterface)
```

Adds a trace entity (4 edge closed polyline) that was read from the file via the creation interface.

Author

AHM

References [DL_CreationInterface::addTrace\(\)](#), and [DL_TraceData::x](#).

Referenced by [processDXFGroup\(\)](#).

5.21.2.4 checkVariable()

```
bool DL_Dxf::checkVariable (
    const char * var,
    DL_Codes::version version) [static]
```

Converts the given string into a double or returns the given default valud (def) if value is NULL or empty.

Checks if the given variable is known by the given DXF version.

Converts the given string into an int or returns the given default valud (def) if value is NULL or empty. Converts the given string into a string or returns the given default valud (def) if value is NULL or empty.

5.21.2.5 getDimData()

```
DL_DimensionData DL_Dxf::getDimData ()
```

Returns

dimension data from current values.

Referenced by [addDimAligned\(\)](#), [addDimAngular\(\)](#), [addDimAngular3P\(\)](#), [addDimDiametric\(\)](#), [addDimLinear\(\)](#), [addDimOrdinate\(\)](#), and [addDimRadial\(\)](#).

5.21.2.6 getLibVersion()

```
int DL_Dxf::getLibVersion (
    const std::string & str)
```

Returns

the library version as int (4 bytes, each byte one version number). e.g. if str = "2.0.2.0" getLibVersion returns 0x02000200

Referenced by [processDXFGroup\(\)](#).

5.21.2.7 getStrippedLine()

```
bool DL_Dxf::getStrippedLine (
    std::string & s,
    unsigned int size,
    FILE * fp,
    bool stripSpace = true) [static]
```

Reads line from file & strips whitespace at start and newline at end.

Parameters

<i>s</i>	Output Pointer to character array that chopped line will be returned in.
<i>size</i>	Size of <i>s</i> . (Including space for NULL.)
<i>fp</i>	Input Handle of input file.

Return values

<i>true</i>	if line could be read
<i>false</i>	if <i>fp</i> is already at end of file

Todo Change function to use safer FreeBSD `strl*` functions

Is it a problem if line is blank (i.e., newline only)? Then, when function returns, (`s==NULL`).

References [stripWhiteSpace\(\)](#).

Referenced by [readDxfGroups\(\)](#), and [readDxfGroups\(\)](#).

5.21.2.8 `in()` [1/2]

```
bool DL_Dxf::in (
    const std::string & file,
    DL_CreationInterface * creationInterface)
```

Reads the given file and calls the appropriate functions in the given creation interface for every entity found in the file.

Parameters

<i>file</i>	Input Path and name of file to read
<i>creationInterface</i>	Pointer to the class which takes care of the entities in the file.

Return values

<i>true</i>	If <i>file</i> could be opened.
<i>false</i>	If <i>file</i> could not be opened.

References [readDxfGroups\(\)](#).

5.21.2.9 `in()` [2/2]

```
bool DL_Dxf::in (
    std::istream & stream,
    DL_CreationInterface * creationInterface)
```

Reads a DXF file from an existing stream.

Parameters

<i>stream</i>	The input stream.
<i>creationInterface</i>	Pointer to the class which takes care of the entities in the file.

Return values

<i>true</i>	If <code>file</code> could be opened.
<i>false</i>	If <code>file</code> could not be opened.

References [readDxfGroups\(\)](#).

5.21.2.10 out()

```
DL_WriterA * DL_Dxf::out (
    const char * file,
    DL_Codes::version version = DL_VERSION_2000)
```

Converts the given string into an int.

`ok` is set to `false` if there was an error.

Opens the given file for writing and returns a pointer to the dxf writer. This pointer needs to be passed on to other writing functions.

Parameters

<i>file</i>	Full path of the file to open.
-------------	--------------------------------

Returns

Pointer to an ascii dxf writer object.

References [DL_WriterA::openFailed\(\)](#).

5.21.2.11 processDXFGroup()

```
bool DL_Dxf::processDXFGroup (
    DL_CreationInterface * creationInterface,
    int groupCode,
    const std::string & groupValue)
```

Processes a group (pair of group code and value).

Parameters

<i>creationInterface</i>	Handle to class that creates entities and other CAD data from DXF group codes
<i>groupCode</i>	Constant indicating the data type of the group.
<i>groupValue</i>	The data value.

Return values

<i>true</i>	if done processing current entity and new entity begun
<i>false</i>	if not done processing current entity

References [add3dFace\(\)](#), [addArc\(\)](#), [addArcAlignedText\(\)](#), [addAttribute\(\)](#), [addBlock\(\)](#), [addCircle\(\)](#), [addComment\(\)](#), [addDimAligned\(\)](#), [addDimAngular\(\)](#), [addDimAngular3P\(\)](#), [addDimDiametric\(\)](#), [addDimLinear\(\)](#), [addDimOrdinate\(\)](#), [addDimRadial\(\)](#), [addEllipse\(\)](#), [addImage\(\)](#), [addImageDef\(\)](#), [addInsert\(\)](#), [addLayer\(\)](#), [addLeader\(\)](#), [addLine\(\)](#), [addLinetype\(\)](#), [addMText\(\)](#), [addPoint\(\)](#), [addPolyline\(\)](#), [addRay\(\)](#), [addSetting\(\)](#), [addSolid\(\)](#), [addSpline\(\)](#), [addText\(\)](#), [addTrace\(\)](#), [addVertex\(\)](#), [addXLine\(\)](#), [endBlock\(\)](#), [endEntity\(\)](#), [DL_CreationInterface::endSection\(\)](#), [endSequence\(\)](#), [getLibVersion\(\)](#), [handleDictionaryData\(\)](#), [handleHatchData\(\)](#), [handleLeaderData\(\)](#), [handleLinetypeData\(\)](#), [handleLWPolylineData\(\)](#), [handleMTextData\(\)](#), [handleSplineData\(\)](#), [handleXData\(\)](#), [handleXRecordData\(\)](#), [DL_CreationInterface::setAttributes\(\)](#), [DL_CreationInterface::setExtrusion\(\)](#), and [DL_Attributes::setLinetypeScale\(\)](#).

Referenced by [readDxfGroups\(\)](#), and [readDxfGroups\(\)](#).

5.21.2.12 readDxfGroups()

```
bool DL_Dxf::readDxfGroups (
    FILE * fp,
    DL_CreationInterface * creationInterface)
```

Reads a group couplet from a DXF file.

Calls another function to process it.

A group couplet consists of two lines that represent a single piece of data. An integer constant on the first line indicates the type of data. The value is on the next line.

This function reads a couplet, determines the type of data, and passes the value to the the appropriate handler function of `creationInterface`.

`fp` is advanced so that the next call to `readDXFGroups()` reads the next couplet in the file.

Parameters

<i>fp</i>	Handle of input file
<i>creationInterface</i>	Handle of class which processes entities in the file

Return values

<i>true</i>	If EOF not reached.
<i>false</i>	If EOF reached.

References [getStrippedLine\(\)](#), [DL_CreationInterface::processCodeValuePair\(\)](#), and [processDXFGroup\(\)](#).

Referenced by [in\(\)](#), and [in\(\)](#).

5.21.2.13 stripWhiteSpace()

```
bool DL_Dxf::stripWhiteSpace (
    char ** s,
    bool stripSpace = true) [static]
```

Strips leading whitespace and trailing Carriage Return (CR) and Line Feed (LF) from NULL terminated string.

Parameters

<i>s</i>	Input and output. NULL terminates string.
----------	---

Return values

<i>true</i>	if <i>s</i> is non-NULL
<i>false</i>	if <i>s</i> is NULL

Referenced by [getStrippedLine\(\)](#), [getStrippedLine\(\)](#), and [test\(\)](#).

5.21.2.14 test()

```
void DL_Dxf::test () [static]
```

Converts the given string into a double or returns the given default value (def) if value is NULL or empty.

Some test routines.

References [stripWhiteSpace\(\)](#).

5.21.2.15 write3dFace()

```
void DL_Dxf::write3dFace (
    DL_WriterA & dw,
    const DL_3dFaceData & data,
    const DL_Attributes & attrib)
```

Writes a 3d face entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_WriterA::dxfString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), and [DL_TraceData::x](#).

5.21.2.16 writeAppid()

```
void DL_Dxf::writeAppid (
    DL_WriterA & dw,
    const std::string & name)
```

Writes the APPID section to the DXF file.

Parameters

<i>name</i>	Application name
-------------	------------------

References [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxfString\(\)](#), and [DL_Writer::tableAppidEntry\(\)](#).

5.21.2.17 writeArc()

```
void DL_Dxf::writeArc (
    DL_WriterA & dw,
    const DL_ArcData & data,
    const DL_Attributes & attrib)
```

Writes an arc entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_ArcData::angle1](#), [DL_ArcData::angle2](#), [DL_ArcData::cx](#), [DL_ArcData::cy](#), [DL_ArcData::cz](#), [DL_WriterA::dxfReal\(\)](#), [DL_WriterA::dxfString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), and [DL_ArcData::radius](#).

5.21.2.18 writeBlockRecord()

```
void DL_Dxf::writeBlockRecord (
    DL_WriterA & dw)
```

Writes a blockrecord section.

This section is needed in DL_VERSION_R13. Note that this method currently only writes a faked BLOCKRECORD section to make the file readable by Aut*cad.

References [DL_WriterA::dxfHex\(\)](#), [DL_WriterA::dxflnt\(\)](#), and [DL_WriterA::dxfString\(\)](#).

5.21.2.19 writeCircle()

```
void DL_Dxf::writeCircle (
    DL_WriterA & dw,
    const DL_CircleData & data,
    const DL_Attributes & attrib)
```

Writes a circle entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_CircleData::cx](#), [DL_CircleData::cy](#), [DL_CircleData::cz](#), [DL_WriterA::dxfReal\(\)](#), [DL_WriterA::dxfString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), and [DL_CircleData::radius](#).

5.21.2.20 writeControlPoint()

```
void DL_Dxf::writeControlPoint (
    DL_WriterA & dw,
    const DL_ControlPointData & data)
```

Writes a single control point of a spline to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_WriterA::dxflReal\(\)](#), [DL_ControlPointData::x](#), [DL_ControlPointData::y](#), and [DL_ControlPointData::z](#).

5.21.2.21 writeDimAligned()

```
void DL_Dxf::writeDimAligned (
    DL_WriterA & dw,
    const DL_DimensionData & data,
    const DL_DimAlignedData & edata,
    const DL_Attributes & attrib)
```

Writes an aligned dimension entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Generic dimension data for from the file
<i>data</i>	Specific aligned dimension data from the file
<i>attrib</i>	Attributes

References [DL_DimensionData::angle](#), [DL_DimensionData::attachmentPoint](#), [DL_DimensionData::dpx](#), [DL_DimensionData::dpy](#), [DL_DimensionData::dpz](#), [DL_WriterA::dxflInt\(\)](#), [DL_WriterA::dxflReal\(\)](#), [DL_WriterA::dxflString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_DimAlignedData::epx1](#), [DL_DimAlignedData::epx2](#), [DL_DimAlignedData::epy1](#), [DL_DimAlignedData::epy2](#), [DL_DimensionData::lineSpacingFactor](#), [DL_DimensionData::lineSpacingStyle](#), [DL_DimensionData::mpx](#), [DL_DimensionData::mpy](#), [DL_DimensionData::text](#), and [DL_DimensionData::type](#).

5.21.2.22 writeDimAngular2L()

```
void DL_Dxf::writeDimAngular2L (
    DL_WriterA & dw,
    const DL_DimensionData & data,
    const DL_DimAngular2LData & edata,
    const DL_Attributes & attrib)
```

Writes an angular dimension entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Generic dimension data for from the file
<i>data</i>	Specific angular dimension data from the file
<i>attrib</i>	Attributes

References [DL_DimensionData::angle](#), [DL_DimensionData::attachmentPoint](#), [DL_DimensionData::dpx](#), [DL_DimAngular2LData::dpx1](#), [DL_DimAngular2LData::dpx2](#), [DL_DimAngular2LData::dpx3](#), [DL_DimAngular2LData::dpx4](#), [DL_DimensionData::dpy](#), [DL_DimAngular2LData::dpy1](#), [DL_DimAngular2LData::dpy2](#), [DL_DimAngular2LData::dpy3](#), [DL_DimAngular2LData::dpy4](#), [DL_DimensionData::dpz](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxflreal\(\)](#), [DL_WriterA::dxflstring\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_DimensionData::lineSpacingFactor](#), [DL_DimensionData::lineSpacingStyle](#), [DL_DimensionData::mpx](#), [DL_DimensionData::mpy](#), [DL_DimensionData::text](#), and [DL_DimensionData::type](#).

5.21.2.23 writeDimAngular3P()

```
void DL_Dxf::writeDimAngular3P (
    DL_WriterA & dw,
    const DL_DimensionData & data,
    const DL_DimAngular3PData & edata,
    const DL_Attributes & attrib)
```

Writes an angular dimension entity (3 points version) to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Generic dimension data for from the file
<i>data</i>	Specific angular dimension data from the file
<i>attrib</i>	Attributes

References [DL_DimensionData::angle](#), [DL_DimensionData::attachmentPoint](#), [DL_DimensionData::dpx](#), [DL_DimAngular3PData::dpx1](#), [DL_DimAngular3PData::dpx2](#), [DL_DimAngular3PData::dpx3](#), [DL_DimensionData::dpy](#), [DL_DimAngular3PData::dpy1](#), [DL_DimAngular3PData::dpy2](#), [DL_DimAngular3PData::dpy3](#), [DL_DimensionData::dpz](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxflreal\(\)](#), [DL_WriterA::dxflstring\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_DimensionData::lineSpacingFactor](#), [DL_DimensionData::lineSpacingStyle](#), [DL_DimensionData::mpx](#), [DL_DimensionData::mpy](#), [DL_DimensionData::text](#), and [DL_DimensionData::type](#).

5.21.2.24 writeDimDiametric()

```
void DL_Dxf::writeDimDiametric (
    DL_WriterA & dw,
    const DL_DimensionData & data,
    const DL_DimDiametricData & edata,
    const DL_Attributes & attrib)
```

Writes a diametric dimension entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Generic dimension data for from the file

<i>data</i>	Specific diametric dimension data from the file
<i>attrib</i>	Attributes

References [DL_DimensionData::angle](#), [DL_DimensionData::attachmentPoint](#), [DL_DimDiametricData::dpx](#), [DL_DimensionData::dpx](#), [DL_DimDiametricData::dpy](#), [DL_DimensionData::dpy](#), [DL_DimensionData::dpz](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxflntReal\(\)](#), [DL_WriterA::dxflntString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_DimDiametricData::leader](#), [DL_DimensionData::lineSpacingFactor](#), [DL_DimensionData::lineSpacingStyle](#), [DL_DimensionData::mpx](#), [DL_DimensionData::mpy](#), [DL_DimensionData::text](#), and [DL_DimensionData::type](#).

5.21.2.25 writeDimLinear()

```
void DL_Dxf::writeDimLinear (
    DL_WriterA & dw,
    const DL_DimensionData & data,
    const DL_DimLinearData & edata,
    const DL_Attributes & attrib)
```

Writes a linear dimension entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Generic dimension data for from the file
<i>data</i>	Specific linear dimension data from the file
<i>attrib</i>	Attributes

References [DL_DimensionData::angle](#), [DL_DimLinearData::angle](#), [DL_DimensionData::attachmentPoint](#), [DL_DimensionData::dpx](#), [DL_DimLinearData::dpx1](#), [DL_DimLinearData::dpx2](#), [DL_DimensionData::dpy](#), [DL_DimLinearData::dpy1](#), [DL_DimLinearData::dpy2](#), [DL_DimensionData::dpz](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxflntReal\(\)](#), [DL_WriterA::dxflntString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_DimensionData::lineSpacingFactor](#), [DL_DimensionData::lineSpacingStyle](#), [DL_DimensionData::mpx](#), [DL_DimensionData::mpy](#), [DL_DimensionData::text](#), and [DL_DimensionData::type](#).

5.21.2.26 writeDimOrdinate()

```
void DL_Dxf::writeDimOrdinate (
    DL_WriterA & dw,
    const DL_DimensionData & data,
    const DL_DimOrdinateData & edata,
    const DL_Attributes & attrib)
```

Writes an ordinate dimension entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Generic dimension data for from the file
<i>data</i>	Specific ordinate dimension data from the file
<i>attrib</i>	Attributes

References [DL_DimensionData::attachmentPoint](#), [DL_DimensionData::dpx](#), [DL_DimOrdinateData::dpx1](#), [DL_DimOrdinateData::dpx2](#), [DL_DimensionData::dpy](#), [DL_DimOrdinateData::dpy1](#), [DL_DimOrdinateData::dpy2](#), [DL_DimensionData::dpz](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxflntReal\(\)](#), [DL_WriterA::dxflntString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_DimensionData::lineSpacingFactor](#), [DL_DimensionData::lineSpacingStyle](#), [DL_DimensionData::mpx](#), [DL_DimensionData::mpy](#), [DL_DimensionData::text](#), [DL_DimensionData::type](#), and [DL_DimOrdinateData::xtype](#).

5.21.2.27 writeDimRadial()

```
void DL_Dxf::writeDimRadial (
    DL_WriterA & dw,
    const DL_DimensionData & data,
    const DL_DimRadialData & edata,
    const DL_Attributes & attrib)
```

Writes a radial dimension entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Generic dimension data for from the file
<i>edata</i>	Specific radial dimension data from the file
<i>attrib</i>	Attributes

References [DL_DimensionData::angle](#), [DL_DimensionData::attachmentPoint](#), [DL_DimensionData::dpx](#), [DL_DimRadialData::dpx](#), [DL_DimensionData::dpy](#), [DL_DimRadialData::dpy](#), [DL_DimensionData::dpz](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxflntReal\(\)](#), [DL_WriterA::dxflntString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_DimRadialData::leader](#), [DL_DimensionData::lineSpacing](#), [DL_DimensionData::lineSpacingStyle](#), [DL_DimensionData::mpx](#), [DL_DimensionData::mpy](#), [DL_DimensionData::text](#), and [DL_DimensionData::type](#).

5.21.2.28 writeDimStyle()

```
void DL_Dxf::writeDimStyle (
    DL_WriterA & dw,
    double dimasz,
    double dimexe,
    double dimexo,
    double dimgap,
    double dimtxt)
```

Writes a dimstyle section.

This section is needed in DL_VERSION_R13. Note that this method currently only writes a faked DIMSTYLE section to make the file readable by Aut*cad.

References [DL_WriterA::dxflntHex\(\)](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxflntReal\(\)](#), and [DL_WriterA::dxflntString\(\)](#).

5.21.2.29 writeEllipse()

```
void DL_Dxf::writeEllipse (
    DL_WriterA & dw,
    const DL_EllipseData & data,
    const DL_Attributes & attrib)
```

Writes an ellipse entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_EllipseData::angle1](#), [DL_EllipseData::angle2](#), [DL_EllipseData::cx](#), [DL_EllipseData::cy](#), [DL_EllipseData::cz](#), [DL_WriterA::dxflntReal\(\)](#), [DL_WriterA::dxflntString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_EllipseData::mx](#), [DL_EllipseData::my](#), [DL_EllipseData::mz](#), and [DL_EllipseData::ratio](#).

5.21.2.30 writeEndBlock()

```
void DL_Dxf::writeEndBlock (
    DL_WriterA & dw,
    const std::string & name)
```

Writes a block end.

Parameters

<i>name</i>	Block name
-------------	------------

References [DL_Writer::sectionBlockEntryEnd\(\)](#).

5.21.2.31 writeFitPoint()

```
void DL_Dxf::writeFitPoint (
    DL_WriterA & dw,
    const DL_FitPointData & data)
```

Writes a single fit point of a spline to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_WriterA::dxfReal\(\)](#), [DL_FitPointData::x](#), [DL_FitPointData::y](#), and [DL_FitPointData::z](#).

5.21.2.32 writeHatch1()

```
void DL_Dxf::writeHatch1 (
    DL_WriterA & dw,
    const DL_HatchData & data,
    const DL_Attributes & attrib)
```

Writes the beginning of a hatch entity to the file.

This must be followed by one or more [writeHatchLoop\(\)](#) calls and a [writeHatch2\(\)](#) call.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data.
<i>attrib</i>	Attributes

References [DL_WriterA::dxfInt\(\)](#), [DL_WriterA::dxfReal\(\)](#), [DL_WriterA::dxfString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_HatchData::numLoops](#), [DL_HatchData::pattern](#), and [DL_HatchData::solid](#).

5.21.2.33 writeHatch2()

```
void DL_Dxf::writeHatch2 (
    DL_WriterA & dw,
    const DL_HatchData & data,
    const DL_Attributes & attrib)
```

Writes the end of a hatch entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data.
<i>attrib</i>	Attributes

References [DL_HatchData::angle](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxfReal\(\)](#), [DL_WriterA::dxString\(\)](#), [DL_HatchData::originX](#), [DL_HatchData::scale](#), and [DL_HatchData::solid](#).

5.21.2.34 writeHatchEdge()

```
void DL_Dxf::writeHatchEdge (
    DL_WriterA & dw,
    const DL_HatchEdgeData & data)
```

Writes the beginning of a hatch entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data.
<i>attrib</i>	Attributes

References [DL_HatchEdgeData::angle1](#), [DL_HatchEdgeData::angle2](#), [DL_HatchEdgeData::ccw](#), [DL_HatchEdgeData::cx](#), [DL_HatchEdgeData::cy](#), [DL_HatchEdgeData::degree](#), [DL_Writer::dxBool\(\)](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxReal\(\)](#), [DL_HatchEdgeData::mx](#), [DL_HatchEdgeData::my](#), [DL_HatchEdgeData::nControl](#), [DL_HatchEdgeData::nFit](#), [DL_HatchEdgeData::nKnots](#), [DL_HatchEdgeData::radius](#), [DL_HatchEdgeData::ratio](#), [DL_HatchEdgeData::type](#), [DL_HatchEdgeData::x1](#), [DL_HatchEdgeData::x2](#), [DL_HatchEdgeData::y1](#), and [DL_HatchEdgeData::y2](#).

5.21.2.35 writeHatchLoop1()

```
void DL_Dxf::writeHatchLoop1 (
    DL_WriterA & dw,
    const DL_HatchLoopData & data)
```

Writes the beginning of a hatch loop to the file.

This must happen after writing the beginning of a hatch entity.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data.
<i>attrib</i>	Attributes

References [DL_WriterA::dxflnt\(\)](#), and [DL_HatchLoopData::numEdges](#).

5.21.2.36 writeHatchLoop2()

```
void DL_Dxf::writeHatchLoop2 (
    DL_WriterA & dw,
    const DL_HatchLoopData & data)
```

Writes the end of a hatch loop to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data.
<i>attrib</i>	Attributes

References [DL_WriterA::dxflnt\(\)](#).

5.21.2.37 writeImage()

```
unsigned long DL_Dxf::writeImage (
    DL_WriterA & dw,
    const DL_ImageData & data,
    const DL_Attributes & attrib)
```

Writes an image entity.

Returns

IMAGEDEF handle. Needed for the IMAGEDEF counterpart.

References [DL_ImageData::brightness](#), [DL_ImageData::contrast](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxflReal\(\)](#), [DL_WriterA::dxflString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_ImageData::fade](#), [DL_Writer::handle\(\)](#), [DL_ImageData::height](#), [DL_ImageData::ipx](#), [DL_ImageData::ipy](#), [DL_ImageData::ipz](#), [DL_ImageData::ux](#), [DL_ImageData::uy](#), [DL_ImageData::uz](#), [DL_ImageData::vx](#), [DL_ImageData::vy](#), [DL_ImageData::vz](#), and [DL_ImageData::width](#).

5.21.2.38 writeInsert()

```
void DL_Dxf::writeInsert (
    DL_WriterA & dw,
    const DL_InsertData & data,
    const DL_Attributes & attrib)
```

Writes an insert to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_InsertData::angle](#), [DL_InsertData::cols](#), [DL_InsertData::colSp](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxflReal\(\)](#), [DL_WriterA::dxflString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_InsertData::ipx](#), [DL_InsertData::ipy](#), [DL_InsertData::ipz](#), [DL_InsertData::name](#), [DL_InsertData::rows](#), [DL_InsertData::rowSp](#), [DL_InsertData::sx](#), and [DL_InsertData::sy](#).

5.21.2.39 writeKnot()

```
void DL_Dxf::writeKnot (
    DL_WriterA & dw,
    const DL_KnotData & data)
```

Writes a single knot of a spline to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_WriterA::dxfReal\(\)](#), and [DL_KnotData::k](#).

5.21.2.40 writeLayer()

```
void DL_Dxf::writeLayer (
    DL_WriterA & dw,
    const DL_LayerData & data,
    const DL_Attributes & attrib)
```

Writes a layer to the file.

Layers are stored in the tables section of a DXF file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_WriterA::dxHex\(\)](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxString\(\)](#), [DL_LayerData::flags](#), [DL_Attributes::getColor\(\)](#), [DL_Attributes::getColor24\(\)](#), [DL_Attributes::getLinetype\(\)](#), [DL_Attributes::getWidth\(\)](#), [DL_LayerData::name](#), [DL_LayerData::off](#), and [DL_Writer::tableLayerEntry\(\)](#).

5.21.2.41 writeLeader()

```
void DL_Dxf::writeLeader (
    DL_WriterA & dw,
    const DL_LeaderData & data,
    const DL_Attributes & attrib)
```

Writes a leader entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

See also

[writeVertex](#)

References [DL_LeaderData::arrowHeadFlag](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxReal\(\)](#), [DL_WriterA::dxString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_LeaderData::hooklineDirectionFlag](#), [DL_LeaderData::hooklineFlag](#), [DL_LeaderData::leaderCreationFlag](#), [DL_LeaderData::leaderPathType](#), [DL_LeaderData::number](#), [DL_LeaderData::textAnnotationHeader](#), and [DL_LeaderData::textAnnotationWidth](#).

5.21.2.42 writeLeaderVertex()

```
void DL_Dxf::writeLeaderVertex (
    DL_WriterA & dw,
    const DL_LeaderVertexData & data)
```

Writes a single vertex of a leader to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data

References [DL_WriterA::dxReal\(\)](#), [DL_LeaderVertexData::x](#), and [DL_LeaderVertexData::y](#).

5.21.2.43 writeLine()

```
void DL_Dxf::writeLine (
    DL_WriterA & dw,
    const DL_LineData & data,
    const DL_Attributes & attrib)
```

Writes a line entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_WriterA::dxString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_LineData::x1](#), [DL_LineData::x2](#), [DL_LineData::y1](#), [DL_LineData::y2](#), [DL_LineData::z1](#), and [DL_LineData::z2](#).

5.21.2.44 writeLinetype()

```
void DL_Dxf::writeLinetype (
    DL_WriterA & dw,
    const DL_LinetypeData & data)
```

Writes a line type to the file.

Line types are stored in the tables section of a DXF file.

References [DL_LinetypeData::description](#), [DL_WriterA::dxInt\(\)](#), [DL_WriterA::dxReal\(\)](#), [DL_WriterA::dxString\(\)](#), [DL_LinetypeData::flags](#), [DL_LinetypeData::name](#), [DL_LinetypeData::numberOfDashes](#), [DL_LinetypeData::pattern](#), [DL_LinetypeData::patternLength](#), and [DL_Writer::tableLinetypeEntry\(\)](#).

5.21.2.45 writeMText()

```
void DL_Dxf::writeMText (
    DL_WriterA & dw,
    const DL_MTextData & data,
    const DL_Attributes & attrib)
```

Writes a multi text entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_MTextData::angle](#), [DL_MTextData::attachmentPoint](#), [DL_MTextData::drawingDirection](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxflReal\(\)](#), [DL_WriterA::dxflString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_MTextData::height](#), [DL_MTextData::ipx](#), [DL_MTextData::ipy](#), [DL_MTextData::ipz](#), [DL_MTextData::lineSpacingFactor](#), [DL_MTextData::lineSpacingStyle](#), [DL_MTextData::style](#), [DL_MTextData::text](#), and [DL_MTextData::width](#).

5.21.2.46 writeObjects()

```
void DL_Dxf::writeObjects (
    DL_WriterA & dw,
    const std::string & appDictionaryName = "")
```

Writes a objects section.

This section is needed in DL_VERSION_R13. Note that this method currently only writes a faked OBJECTS section to make the file readable by Aut*cad.

References [DL_WriterA::dxflHex\(\)](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxflReal\(\)](#), [DL_WriterA::dxflString\(\)](#), [DL_Writer::getNextHandle\(\)](#), and [DL_Writer::handle\(\)](#).

5.21.2.47 writeObjectsEnd()

```
void DL_Dxf::writeObjectsEnd (
    DL_WriterA & dw)
```

Writes the end of the objects section.

This section is needed in DL_VERSION_R13. Note that this method currently only writes a faked OBJECTS section to make the file readable by Aut*cad.

References [DL_WriterA::dxflString\(\)](#).

5.21.2.48 writePoint()

```
void DL_Dxf::writePoint (
    DL_WriterA & dw,
    const DL_PointData & data,
    const DL_Attributes & attrib)
```

Writes a point entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_WriterA::dxflString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_PointData::x](#), [DL_PointData::y](#), and [DL_PointData::z](#).

5.21.2.49 writePolyline()

```
void DL_Dxf::writePolyline (
    DL_WriterA & dw,
    const DL_PolylineData & data,
    const DL_Attributes & attrib)
```

Writes a polyline entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

See also

[writeVertex](#)

References [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxflntString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_PolylineData::flags](#), [DL_Attributes::getLayer\(\)](#), and [DL_PolylineData::number](#).

5.21.2.50 writePolylineEnd()

```
void DL_Dxf::writePolylineEnd (
    DL_WriterA & dw)
```

Writes the polyline end.

Only needed for DXF R12.

References [DL_Writer::entity\(\)](#).

5.21.2.51 writeRay()

```
void DL_Dxf::writeRay (
    DL_WriterA & dw,
    const DL_RayData & data,
    const DL_Attributes & attrib)
```

Writes a ray entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_RayData::bx](#), [DL_RayData::by](#), [DL_RayData::bz](#), [DL_RayData::dx](#), [DL_WriterA::dxflntString\(\)](#), [DL_RayData::dy](#), [DL_RayData::dz](#), [DL_Writer::entity\(\)](#), and [DL_Writer::entityAttributes\(\)](#).

5.21.2.52 writeSolid()

```
void DL_Dxf::writeSolid (
    DL_WriterA & dw,
    const DL_SolidData & data,
    const DL_Attributes & attrib)
```

Writes a solid entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_WriterA::dxReal\(\)](#), [DL_WriterA::dxString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_TraceData::thickness](#), and [DL_TraceData::x](#).

5.21.2.53 writeSpline()

```
void DL_Dxf::writeSpline (
    DL_WriterA & dw,
    const DL_SplineData & data,
    const DL_Attributes & attrib)
```

Writes a spline entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

See also

[writeControlPoint](#)

References [DL_SplineData::degree](#), [DL_WriterA::dxInt\(\)](#), [DL_WriterA::dxString\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_SplineData::flags](#), [DL_SplineData::nControl](#), [DL_SplineData::nFit](#), and [DL_SplineData::nKnots](#).

5.21.2.54 writeStyle()

```
void DL_Dxf::writeStyle (
    DL_WriterA & dw,
    const DL_StyleData & style)
```

Writes a style section.

This section is needed in DL_VERSION_R13.

References [DL_StyleData::bigFontFile](#), [DL_WriterA::dxInt\(\)](#), [DL_WriterA::dxReal\(\)](#), [DL_WriterA::dxString\(\)](#), [DL_StyleData::fixedTextHeight](#), [DL_StyleData::flags](#), [DL_Writer::handle\(\)](#), [DL_StyleData::lastHeightUsed](#), [DL_StyleData::name](#), [DL_StyleData::obliqueAngle](#), [DL_StyleData::primaryFontFile](#), [DL_StyleData::textGenerationFlags](#), and [DL_StyleData::widthFactor](#).

5.21.2.55 writeText()

```
void DL_Dxf::writeText (
    DL_WriterA & dw,
    const DL_TextData & data,
    const DL_Attributes & attrib)
```

Writes a text entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_TextData::angle](#), [DL_TextData::apx](#), [DL_TextData::apy](#), [DL_TextData::apz](#), [DL_WriterA::dxflnt\(\)](#), [DL_WriterA::dxflreal\(\)](#), [DL_WriterA::dxflstring\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_TextData::height](#), [DL_TextData::hJustification](#), [DL_TextData::ipx](#), [DL_TextData::ipy](#), [DL_TextData::ipz](#), [DL_TextData::style](#), [DL_TextData::text](#), [DL_TextData::textGenerationFlags](#), [DL_TextData::vJustification](#), and [DL_TextData::xScaleFactor](#).

5.21.2.56 writeTrace()

```
void DL_Dxf::writeTrace (
    DL_WriterA & dw,
    const DL_TraceData & data,
    const DL_Attributes & attrib)
```

Writes a trace entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_WriterA::dxflreal\(\)](#), [DL_WriterA::dxflstring\(\)](#), [DL_Writer::entity\(\)](#), [DL_Writer::entityAttributes\(\)](#), [DL_TraceData::thickness](#), and [DL_TraceData::x](#).

5.21.2.57 writeUcs()

```
void DL_Dxf::writeUcs (
    DL_WriterA & dw)
```

Writes a ucs section.

This section is needed in DL_VERSION_R13. Note that this method currently only writes a faked UCS section to make the file readable by Aut*cad.

References [DL_WriterA::dxflhex\(\)](#), [DL_WriterA::dxflnt\(\)](#), and [DL_WriterA::dxflstring\(\)](#).

5.21.2.58 writeVertex()

```
void DL_Dxf::writeVertex (
    DL_WriterA & dw,
    const DL_VertexData & data)
```

Writes a single vertex of a polyline to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_VertexData::bulge](#), [DL_WriterA::dxReal\(\)](#), [DL_WriterA::dxString\(\)](#), [DL_Writer::entity\(\)](#), [DL_VertexData::x](#), [DL_VertexData::y](#), and [DL_VertexData::z](#).

5.21.2.59 writeView()

```
void DL_Dxf::writeView (
    DL_WriterA & dw)
```

Writes a view section.

This section is needed in DL_VERSION_R13. Note that this method currently only writes a faked VIEW section to make the file readable by Aut*cad.

References [DL_WriterA::dxHex\(\)](#), [DL_WriterA::dxInt\(\)](#), and [DL_WriterA::dxString\(\)](#).

5.21.2.60 writeVPort()

```
void DL_Dxf::writeVPort (
    DL_WriterA & dw)
```

Writes a viewport section.

This section is needed in DL_VERSION_R13. Note that this method currently only writes a faked VPORT section to make the file readable by Aut*cad.

References [DL_WriterA::dxHex\(\)](#), [DL_WriterA::dxInt\(\)](#), [DL_WriterA::dxReal\(\)](#), [DL_WriterA::dxString\(\)](#), and [DL_Writer::handle\(\)](#).

5.21.2.61 writeXLine()

```
void DL_Dxf::writeXLine (
    DL_WriterA & dw,
    const DL_XLineData & data,
    const DL_Attributes & attrib)
```

Writes an x line entity to the file.

Parameters

<i>dw</i>	DXF writer
<i>data</i>	Entity data from the file
<i>attrib</i>	Attributes

References [DL_XLineData::bx](#), [DL_XLineData::by](#), [DL_XLineData::bz](#), [DL_XLineData::dx](#), [DL_WriterA::dxString\(\)](#), [DL_XLineData::dy](#), [DL_XLineData::dz](#), [DL_Writer::entity\(\)](#), and [DL_Writer::entityAttributes\(\)](#).

The documentation for this class was generated from the following files:

- src/dl_dxf.h
- src/dl_dxf.cpp

5.22 DL_EllipseData Struct Reference

Ellipse Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_EllipseData](#) (double [cx](#), double [cy](#), double [cz](#), double [mx](#), double [my](#), double [mz](#), double [ratio](#), double [angle1](#), double [angle2](#))

Constructor.

Public Attributes

- double [cx](#)
- double [cy](#)
- double [cz](#)
- double [mx](#)
- double [my](#)
- double [mz](#)
- double [ratio](#)
- double [angle1](#)
- double [angle2](#)

5.22.1 Detailed Description

Ellipse Data.

5.22.2 Constructor & Destructor Documentation

5.22.2.1 DL_EllipseData()

```
DL_EllipseData::DL_EllipseData (  
    double cx,  
    double cy,  
    double cz,  
    double mx,  
    double my,  
    double mz,  
    double ratio,  
    double angle1,  
    double angle2) [inline]
```

Constructor.

Parameters: see member variables.

5.22.3 Member Data Documentation

5.22.3.1 angle1

```
double DL_EllipseData::angle1
```

Startangle of ellipse in rad.

Referenced by [DL_Dxf::writeEllipse\(\)](#).

5.22.3.2 angle2

```
double DL_EllipseData::angle2
```

Endangle of ellipse in rad.

Referenced by [DL_Dxf::writeEllipse\(\)](#).

5.22.3.3 cx

```
double DL_EllipseData::cx
```

X Coordinate of center point.

Referenced by [DL_Dxf::writeEllipse\(\)](#).

5.22.3.4 cy

```
double DL_EllipseData::cy
```

Y Coordinate of center point.

Referenced by [DL_Dxf::writeEllipse\(\)](#).

5.22.3.5 cz

```
double DL_EllipseData::cz
```

Z Coordinate of center point.

Referenced by [DL_Dxf::writeEllipse\(\)](#).

5.22.3.6 mx

```
double DL_EllipseData::mx
```

X coordinate of the endpoint of the major axis.

Referenced by [DL_Dxf::writeEllipse\(\)](#).

5.22.3.7 my

```
double DL_EllipseData::my
```

Y coordinate of the endpoint of the major axis.

Referenced by [DL_Dxf::writeEllipse\(\)](#).

5.22.3.8 mz

```
double DL_EllipseData::mz
```

Z coordinate of the endpoint of the major axis.

Referenced by [DL_Dxf::writeEllipse\(\)](#).

5.22.3.9 ratio

```
double DL_EllipseData::ratio
```

Ratio of minor axis to major axis..

Referenced by [DL_Dxf::writeEllipse\(\)](#).

The documentation for this struct was generated from the following file:

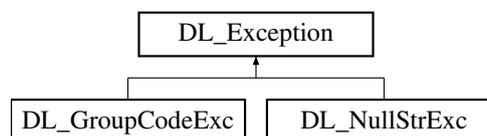
- [src/dl_entities.h](#)

5.23 DL_Exception Class Reference

Used for exception handling.

```
#include <dl_exception.h>
```

Inheritance diagram for DL_Exception:



5.23.1 Detailed Description

Used for exception handling.

The documentation for this class was generated from the following file:

- [src/dl_exception.h](#)

5.24 DL_Extrusion Class Reference

Extrusion direction.

```
#include <dl_extrusion.h>
```

Public Member Functions

- **DL_Extrusion** ()
Default constructor.
- **~DL_Extrusion** ()
Destructor.
- **DL_Extrusion** (double dx, double dy, double dz, double elevation)
Constructor for DXF extrusion.
- void **setDirection** (double dx, double dy, double dz)
Sets the direction vector.
- double * **getDirection** () const
- void **getDirection** (double dir[]) const
- void **setElevation** (double elevation)
Sets the elevation.
- double **getElevation** () const
- **DL_Extrusion operator=** (const DL_Extrusion &extru)
Copies extrusion (deep copies) from another extrusion object.

5.24.1 Detailed Description

Extrusion direction.

Author

Andrew Mustun

5.24.2 Constructor & Destructor Documentation

5.24.2.1 DL_Extrusion()

```
DL_Extrusion::DL_Extrusion (
    double dx,
    double dy,
    double dz,
    double elevation) [inline]
```

Constructor for DXF extrusion.

Parameters

<i>direction</i>	Vector of axis along which the entity shall be extruded this is also the Z axis of the Entity coordinate system
<i>elevation</i>	Distance of the entities XY plane from the origin of the world coordinate system

5.24.3 Member Function Documentation

5.24.3.1 `getDirection()` [1/2]

```
double * DL_Extrusion::getDirection () const [inline]
```

Returns

direction vector.

5.24.3.2 `getDirection()` [2/2]

```
void DL_Extrusion::getDirection (  
    double dir[]) const [inline]
```

Returns

direction vector.

5.24.3.3 `getElevation()`

```
double DL_Extrusion::getElevation () const [inline]
```

Returns

Elevation.

The documentation for this class was generated from the following file:

- `src/dl_extrusion.h`

5.25 DL_FitPointData Struct Reference

Spline fit point data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_FitPointData](#) (double `x`, double `y`, double `z`)
Constructor.

Public Attributes

- double `x`
- double `y`
- double `z`

5.25.1 Detailed Description

Spline fit point data.

5.25.2 Constructor & Destructor Documentation

5.25.2.1 DL_FitPointData()

```
DL_FitPointData::DL_FitPointData (  
    double x,  
    double y,  
    double z) [inline]
```

Constructor.

Parameters: see member variables.

5.25.3 Member Data Documentation

5.25.3.1 x

```
double DL_FitPointData::x
```

X coordinate of the fit point.

Referenced by [DL_Dxf::writeFitPoint\(\)](#).

5.25.3.2 y

```
double DL_FitPointData::y
```

Y coordinate of the fit point.

Referenced by [DL_Dxf::writeFitPoint\(\)](#).

5.25.3.3 z

```
double DL_FitPointData::z
```

Z coordinate of the fit point.

Referenced by [DL_Dxf::writeFitPoint\(\)](#).

The documentation for this struct was generated from the following file:

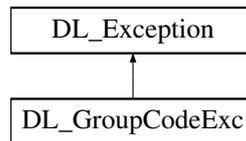
- [src/dl_entities.h](#)

5.26 DL_GroupCodeExc Class Reference

Used for exception handling.

```
#include <dl_exception.h>
```

Inheritance diagram for DL_GroupCodeExc:



5.26.1 Detailed Description

Used for exception handling.

The documentation for this class was generated from the following file:

- src/dl_exception.h

5.27 DL_HatchData Struct Reference

Hatch data.

```
#include <dl_entities.h>
```

Public Member Functions

- **DL_HatchData** ()
Default constructor.
- **DL_HatchData** (int [numLoops](#), bool [solid](#), double [scale](#), double [angle](#), const std::string &[pattern](#), double [originX](#)=0.0, double [originY](#)=0.0)
Constructor.

Public Attributes

- int [numLoops](#)
- bool [solid](#)
- double [scale](#)
- double [angle](#)
- std::string [pattern](#)
- double [originX](#)
- double [originY](#)

5.27.1 Detailed Description

Hatch data.

5.27.2 Constructor & Destructor Documentation

5.27.2.1 DL_HatchData()

```
DL_HatchData::DL_HatchData (  
    int numLoops,  
    bool solid,  
    double scale,  
    double angle,  
    const std::string & pattern,  
    double originX = 0.0,  
    double originY = 0.0) [inline]
```

Constructor.

Parameters: see member variables.

5.27.3 Member Data Documentation

5.27.3.1 angle

```
double DL_HatchData::angle
```

Pattern angle in degrees

Referenced by [DL_Dxf::writeHatch2\(\)](#).

5.27.3.2 numLoops

```
int DL_HatchData::numLoops
```

Number of boundary paths (loops).

Referenced by [DL_Dxf::writeHatch1\(\)](#).

5.27.3.3 originX

```
double DL_HatchData::originX
```

Pattern origin

Referenced by [DL_Dxf::writeHatch2\(\)](#).

5.27.3.4 pattern

```
std::string DL_HatchData::pattern
```

Pattern name.

Referenced by [DL_Dxf::writeHatch1\(\)](#).

5.27.3.5 scale

```
double DL_HatchData::scale
```

Pattern scale or spacing

Referenced by [DL_Dxf::writeHatch2\(\)](#).

5.27.3.6 solid

```
bool DL_HatchData::solid
```

Solid fill flag (true=solid, false=pattern).

Referenced by [DL_Dxf::writeHatch1\(\)](#), and [DL_Dxf::writeHatch2\(\)](#).

The documentation for this struct was generated from the following file:

- [src/dl_entities.h](#)

5.28 DL_HatchEdgeData Struct Reference

Hatch edge data.

```
#include <dl_entities.h>
```

Public Member Functions

- **DL_HatchEdgeData** ()
Default constructor.
- **DL_HatchEdgeData** (double [x1](#), double [y1](#), double [x2](#), double [y2](#))
Constructor for a line edge.
- **DL_HatchEdgeData** (double [cx](#), double [cy](#), double [radius](#), double [angle1](#), double [angle2](#), bool [ccw](#))
Constructor for an arc edge.
- **DL_HatchEdgeData** (double [cx](#), double [cy](#), double [mx](#), double [my](#), double [ratio](#), double [angle1](#), double [angle2](#), bool [ccw](#))
Constructor for an ellipse arc edge.
- **DL_HatchEdgeData** (unsigned int [degree](#), bool [rational](#), bool [periodic](#), unsigned int [nKnots](#), unsigned int [nControl](#), unsigned int [nFit](#), const std::vector< double > &[knots](#), const std::vector< std::vector< double > > &[controlPoints](#), const std::vector< std::vector< double > > &[fitPoints](#), const std::vector< double > &[weights](#), double [startTangentX](#), double [startTangentY](#), double [endTangentX](#), double [endTangentY](#))
Constructor for a spline edge.

Public Attributes

- bool **defined**
Set to true if this edge is fully defined.
- int **type**
Edge type.
- double **x1**
- double **y1**
- double **x2**
- double **y2**
- double **cx**
- double **cy**
- double **radius**
- double **angle1**
- double **angle2**
- bool **ccw**
- double **mx**
- double **my**
- double **ratio**
- unsigned int **degree**
- bool **rational**
- bool **periodic**
- unsigned int **nKnots**
- unsigned int **nControl**
- unsigned int **nFit**
- std::vector< std::vector< double > > **controlPoints**
- std::vector< double > **knots**
- std::vector< double > **weights**
- std::vector< std::vector< double > > **fitPoints**
- double **startTangentX**
- double **startTangentY**
- double **endTangentX**
- double **endTangentY**
- std::vector< std::vector< double > > **vertices**
Polyline boundary vertices (x y [bulge])

5.28.1 Detailed Description

Hatch edge data.

5.28.2 Constructor & Destructor Documentation**5.28.2.1 DL_HatchEdgeData() [1/4]**

```
DL_HatchEdgeData::DL_HatchEdgeData (
    double x1,
    double y1,
    double x2,
    double y2) [inline]
```

Constructor for a line edge.

Parameters: see member variables.

5.28.2.2 DL_HatchEdgeData() [2/4]

```
DL_HatchEdgeData::DL_HatchEdgeData (
    double cx,
    double cy,
    double radius,
    double angle1,
    double angle2,
    bool ccw) [inline]
```

Constructor for an arc edge.

Parameters: see member variables.

5.28.2.3 DL_HatchEdgeData() [3/4]

```
DL_HatchEdgeData::DL_HatchEdgeData (
    double cx,
    double cy,
    double mx,
    double my,
    double ratio,
    double angle1,
    double angle2,
    bool ccw) [inline]
```

Constructor for an ellipse arc edge.

Parameters: see member variables.

5.28.2.4 DL_HatchEdgeData() [4/4]

```
DL_HatchEdgeData::DL_HatchEdgeData (
    unsigned int degree,
    bool rational,
    bool periodic,
    unsigned int nKnots,
    unsigned int nControl,
    unsigned int nFit,
    const std::vector< double > & knots,
    const std::vector< std::vector< double > > & controlPoints,
    const std::vector< std::vector< double > > & fitPoints,
    const std::vector< double > & weights,
    double startTangentX,
    double startTangentY,
    double endTangentX,
    double endTangentY) [inline]
```

Constructor for a spline edge.

Parameters: see member variables.

5.28.3 Member Data Documentation

5.28.3.1 angle1

```
double DL_HatchEdgeData::angle1
```

Start angle of arc or ellipse arc.

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.2 angle2

```
double DL_HatchEdgeData::angle2
```

End angle of arc or ellipse arc.

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.3 ccw

```
bool DL_HatchEdgeData::ccw
```

Counterclockwise flag for arc or ellipse arc.

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.4 cx

```
double DL_HatchEdgeData::cx
```

Center point of arc or ellipse arc (X).

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.5 cy

```
double DL_HatchEdgeData::cy
```

Center point of arc or ellipse arc (Y).

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.6 degree

```
unsigned int DL_HatchEdgeData::degree
```

Spline degree

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.7 mx

```
double DL_HatchEdgeData::mx
```

Major axis end point (X).

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.8 my

```
double DL_HatchEdgeData::my
```

Major axis end point (Y).

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.9 nControl

```
unsigned int DL_HatchEdgeData::nControl
```

Number of control points.

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.10 nFit

```
unsigned int DL_HatchEdgeData::nFit
```

Number of fit points.

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.11 nKnots

```
unsigned int DL_HatchEdgeData::nKnots
```

Number of knots.

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.12 radius

```
double DL_HatchEdgeData::radius
```

Arc radius.

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.13 ratio

```
double DL_HatchEdgeData::ratio
```

Axis ratio

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.14 type

```
int DL_HatchEdgeData::type
```

Edge type.

1=line, 2=arc, 3=elliptic arc, 4=spline.

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.15 x1

```
double DL_HatchEdgeData::x1
```

Start point (X).

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.16 x2

```
double DL_HatchEdgeData::x2
```

End point (X).

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.17 y1

```
double DL_HatchEdgeData::y1
```

Start point (Y).

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

5.28.3.18 y2

```
double DL_HatchEdgeData::y2
```

End point (Y).

Referenced by [DL_Dxf::handleHatchData\(\)](#), and [DL_Dxf::writeHatchEdge\(\)](#).

The documentation for this struct was generated from the following file:

- [src/dl_entities.h](#)

5.29 DL_HatchLoopData Struct Reference

Hatch boundary path (loop) data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_HatchLoopData](#) ()
Default constructor.
- [DL_HatchLoopData](#) (int hNumEdges)
Constructor.

Public Attributes

- int [numEdges](#)

5.29.1 Detailed Description

Hatch boundary path (loop) data.

5.29.2 Constructor & Destructor Documentation

5.29.2.1 DL_HatchLoopData()

```
DL_HatchLoopData::DL_HatchLoopData (  
    int hNumEdges) [inline]
```

Constructor.

Parameters: see member variables.

5.29.3 Member Data Documentation

5.29.3.1 numEdges

```
int DL_HatchLoopData::numEdges
```

Number of edges in this loop.

Referenced by [DL_Dxf::writeHatchLoop1\(\)](#).

The documentation for this struct was generated from the following file:

- src/dl_entities.h

5.30 DL_ImageData Struct Reference

Image Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_ImageData](#) (const std::string &iref, double iipx, double iipy, double iipz, double iux, double iuy, double iuz, double ivx, double ivy, double ivz, int iwidth, int iheight, int ibrightness, int icontrast, int ifade)

Constructor.

Public Attributes

- std::string [ref](#)
- double [ipx](#)
- double [ipy](#)
- double [ipz](#)
- double [ux](#)
- double [uy](#)
- double [uz](#)
- double [vx](#)
- double [vy](#)
- double [vz](#)
- int [width](#)
- int [height](#)
- int [brightness](#)
- int [contrast](#)
- int [fade](#)

5.30.1 Detailed Description

Image Data.

5.30.2 Constructor & Destructor Documentation

5.30.2.1 DL_ImageData()

```
DL_ImageData::DL_ImageData (
    const std::string & iref,
    double iipx,
    double iipy,
    double iipz,
    double iux,
    double iuy,
    double iuz,
    double ivx,
    double ivy,
    double ivz,
    int iwidth,
    int iheight,
    int ibrightness,
    int icontrast,
    int ifade) [inline]
```

Constructor.

Parameters: see member variables.

5.30.3 Member Data Documentation

5.30.3.1 brightness

```
int DL_ImageData::brightness
```

Brightness (0..100, default = 50).

Referenced by [DL_Dxf::writeImage\(\)](#).

5.30.3.2 contrast

```
int DL_ImageData::contrast
```

Contrast (0..100, default = 50).

Referenced by [DL_Dxf::writeImage\(\)](#).

5.30.3.3 fade

```
int DL_ImageData::fade
```

Fade (0..100, default = 0).

Referenced by [DL_Dxf::writeImage\(\)](#).

5.30.3.4 height

```
int DL_ImageData::height
```

Height of image in pixel.

Referenced by [DL_Dxf::writeImage\(\)](#), and [DL_Dxf::writeImageDef\(\)](#).

5.30.3.5 ipx

```
double DL_ImageData::ipx
```

X Coordinate of insertion point.

Referenced by [DL_Dxf::writeImage\(\)](#).

5.30.3.6 ipy

```
double DL_ImageData::ipy
```

Y Coordinate of insertion point.

Referenced by [DL_Dxf::writeImage\(\)](#).

5.30.3.7 ipz

```
double DL_ImageData::ipz
```

Z Coordinate of insertion point.

Referenced by [DL_Dxf::writeImage\(\)](#).

5.30.3.8 ref

```
std::string DL_ImageData::ref
```

Reference to the image file (unique, used to refer to the image def object).

Referenced by [DL_Dxf::writeImageDef\(\)](#).

5.30.3.9 ux

```
double DL_ImageData::ux
```

X Coordinate of u vector along bottom of image.

Referenced by [DL_Dxf::writeImage\(\)](#).

5.30.3.10 uy

```
double DL_ImageData::uy
```

Y Coordinate of u vector along bottom of image.

Referenced by [DL_Dxf::writeImage\(\)](#).

5.30.3.11 uz

```
double DL_ImageData::uz
```

Z Coordinate of u vector along bottom of image.

Referenced by [DL_Dxf::writeImage\(\)](#).

5.30.3.12 vx

```
double DL_ImageData::vx
```

X Coordinate of v vector along left side of image.

Referenced by [DL_Dxf::writeImage\(\)](#).

5.30.3.13 vy

```
double DL_ImageData::vy
```

Y Coordinate of v vector along left side of image.

Referenced by [DL_Dxf::writeImage\(\)](#).

5.30.3.14 vz

```
double DL_ImageData::vz
```

Z Coordinate of v vector along left side of image.

Referenced by [DL_Dxf::writeImage\(\)](#).

5.30.3.15 width

```
int DL_ImageData::width
```

Width of image in pixel.

Referenced by [DL_Dxf::writeImage\(\)](#), and [DL_Dxf::writeImageDef\(\)](#).

The documentation for this struct was generated from the following file:

- [src/dl_entities.h](#)

5.31 DL_ImageDefData Struct Reference

Image Definition Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_ImageDefData](#) (const std::string &iref, const std::string &file)
Constructor.

Public Attributes

- std::string [ref](#)
- std::string [file](#)

5.31.1 Detailed Description

Image Definition Data.

5.31.2 Constructor & Destructor Documentation

5.31.2.1 DL_ImageDefData()

```
DL_ImageDefData::DL_ImageDefData (  
    const std::string & iref,  
    const std::string & ifile) [inline]
```

Constructor.

Parameters: see member variables.

5.31.3 Member Data Documentation

5.31.3.1 file

```
std::string DL_ImageDefData::file
```

Image file

5.31.3.2 ref

```
std::string DL_ImageDefData::ref
```

Reference to the image file (unique, used to refer to the image def object).

The documentation for this struct was generated from the following file:

- src/dl_entities.h

5.32 DL_InsertData Struct Reference

Insert Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_InsertData](#) (const std::string &name, double ipx, double ipy, double ipz, double sx, double sy, double sz, double angle, int cols, int rows, double colSp, double rowSp)
Constructor.

Public Attributes

- `std::string name`
- `double ipx`
- `double ipy`
- `double ipz`
- `double sx`
- `double sy`
- `double sz`
- `double angle`
- `int cols`
- `int rows`
- `double colSp`
- `double rowSp`

5.32.1 Detailed Description

Insert Data.

5.32.2 Constructor & Destructor Documentation

5.32.2.1 DL_InsertData()

```
DL_InsertData::DL_InsertData (  
    const std::string & name,  
    double ipx,  
    double ipy,  
    double ipz,  
    double sx,  
    double sy,  
    double sz,  
    double angle,  
    int cols,  
    int rows,  
    double colSp,  
    double rowSp) [inline]
```

Constructor.

Parameters: see member variables.

5.32.3 Member Data Documentation

5.32.3.1 angle

```
double DL_InsertData::angle
```

Rotation angle in degrees.

Referenced by [DL_Dxf::writeInsert\(\)](#).

5.32.3.2 cols

```
int DL_InsertData::cols
```

Number of columns if we insert an array of the block or 1.

Referenced by [DL_Dxf::writeInsert\(\)](#).

5.32.3.3 colSp

```
double DL_InsertData::colSp
```

Values for the spacing between cols.

Referenced by [DL_Dxf::writeInsert\(\)](#).

5.32.3.4 ipx

```
double DL_InsertData::ipx
```

X Coordinate of insertion point.

Referenced by [DL_Dxf::writeInsert\(\)](#).

5.32.3.5 ipy

```
double DL_InsertData::ipy
```

Y Coordinate of insertion point.

Referenced by [DL_Dxf::writeInsert\(\)](#).

5.32.3.6 ipz

```
double DL_InsertData::ipz
```

Z Coordinate of insertion point.

Referenced by [DL_Dxf::writeInsert\(\)](#).

5.32.3.7 name

```
std::string DL_InsertData::name
```

Name of the referred block.

Referenced by [DL_Dxf::writeInsert\(\)](#).

5.32.3.8 rows

```
int DL_InsertData::rows
```

Number of rows if we insert an array of the block or 1.

Referenced by [DL_Dxf::writeInsert\(\)](#).

5.32.3.9 rowSp

```
double DL_InsertData::rowSp
```

Values for the spacing between rows.

Referenced by [DL_Dxf::writeInsert\(\)](#).

5.32.3.10 sx

```
double DL_InsertData::sx
```

X Scale factor.

Referenced by [DL_Dxf::writeInsert\(\)](#).

5.32.3.11 sy

```
double DL_InsertData::sy
```

Y Scale factor.

Referenced by [DL_Dxf::writeInsert\(\)](#).

5.32.3.12 sz

```
double DL_InsertData::sz
```

Z Scale factor.

The documentation for this struct was generated from the following file:

- [src/dl_entities.h](#)

5.33 DL_KnotData Struct Reference

Spline knot data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_KnotData](#) (double pk)
Constructor.

Public Attributes

- double [k](#)

5.33.1 Detailed Description

Spline knot data.

5.33.2 Constructor & Destructor Documentation

5.33.2.1 DL_KnotData()

```
DL_KnotData::DL_KnotData (  
    double pk) [inline]
```

Constructor.

Parameters: see member variables.

5.33.3 Member Data Documentation

5.33.3.1 k

```
double DL_KnotData::k
```

Knot value.

Referenced by [DL_Dxf::writeKnot\(\)](#).

The documentation for this struct was generated from the following file:

- src/dl_entities.h

5.34 DL_LayerData Struct Reference

Layer Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_LayerData](#) (const std::string &name, int flags, bool off=false)
Constructor.

Public Attributes

- std::string name
Layer name.
- int flags
Layer flags.
- bool off
Layer is off.

5.34.1 Detailed Description

Layer Data.

5.34.2 Constructor & Destructor Documentation

5.34.2.1 DL_LayerData()

```
DL_LayerData::DL_LayerData (  
    const std::string & name,  
    int flags,  
    bool off = false) [inline]
```

Constructor.

Parameters: see member variables.

5.34.3 Member Data Documentation

5.34.3.1 flags

```
int DL_LayerData::flags
```

Layer flags.

(1 = frozen, 2 = frozen by default, 4 = locked)

Referenced by [DL_Dxf::writeLayer\(\)](#).

The documentation for this struct was generated from the following file:

- src/dl_entities.h

5.35 DL_LeaderData Struct Reference

Leader (arrow).

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_LeaderData](#) (int [arrowHeadFlag](#), int [leaderPathType](#), int [leaderCreationFlag](#), int [hooklineDirectionFlag](#), int [hooklineFlag](#), double [textAnnotationHeight](#), double [textAnnotationWidth](#), int [number](#), double [dimScale](#)=1.0)
Constructor.

Public Attributes

- int [arrowHeadFlag](#)
- int [leaderPathType](#)
- int [leaderCreationFlag](#)
- int [hooklineDirectionFlag](#)
- int [hooklineFlag](#)
- double [textAnnotationHeight](#)
- double [textAnnotationWidth](#)
- int [number](#)
- double [dimScale](#)

5.35.1 Detailed Description

Leader (arrow).

5.35.2 Constructor & Destructor Documentation

5.35.2.1 DL_LeaderData()

```
DL_LeaderData::DL_LeaderData (  
    int arrowHeadFlag,  
    int leaderPathType,  
    int leaderCreationFlag,  
    int hooklineDirectionFlag,  
    int hooklineFlag,  
    double textAnnotationHeight,  
    double textAnnotationWidth,  
    int number,  
    double dimScale = 1.0) [inline]
```

Constructor.

Parameters: see member variables.

5.35.3 Member Data Documentation

5.35.3.1 arrowHeadFlag

```
int DL_LeaderData::arrowHeadFlag
```

Arrow head flag (71).

Referenced by [DL_Dxf::writeLeader\(\)](#).

5.35.3.2 dimScale

```
double DL_LeaderData::dimScale
```

Dimension scale (dimscale) style override.

5.35.3.3 hooklineDirectionFlag

```
int DL_LeaderData::hooklineDirectionFlag
```

Hookline direction flag (74).

Referenced by [DL_Dxf::writeLeader\(\)](#).

5.35.3.4 hooklineFlag

```
int DL_LeaderData::hooklineFlag
```

Hookline flag (75)

Referenced by [DL_Dxf::writeLeader\(\)](#).

5.35.3.5 leaderCreationFlag

```
int DL_LeaderData::leaderCreationFlag
```

Leader creation flag (73).

Referenced by [DL_Dxf::writeLeader\(\)](#).

5.35.3.6 leaderPathType

```
int DL_LeaderData::leaderPathType
```

Leader path type (72).

Referenced by [DL_Dxf::writeLeader\(\)](#).

5.35.3.7 number

```
int DL_LeaderData::number
```

Number of vertices in leader (76).

Referenced by [DL_Dxf::writeLeader\(\)](#).

5.35.3.8 textAnnotationHeight

```
double DL_LeaderData::textAnnotationHeight
```

Text annotation height (40).

Referenced by [DL_Dxf::writeLeader\(\)](#).

5.35.3.9 textAnnotationWidth

```
double DL_LeaderData::textAnnotationWidth
```

Text annotation width (41)

Referenced by [DL_Dxf::writeLeader\(\)](#).

The documentation for this struct was generated from the following file:

- `src/dl_entities.h`

5.36 DL_LeaderVertexData Struct Reference

Leader Vertex Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_LeaderVertexData](#) (double px=0.0, double py=0.0, double pz=0.0)
Constructor.

Public Attributes

- double `x`
- double `y`
- double `z`

5.36.1 Detailed Description

Leader Vertex Data.

5.36.2 Constructor & Destructor Documentation

5.36.2.1 DL_LeaderVertexData()

```
DL_LeaderVertexData::DL_LeaderVertexData (  
    double px = 0.0,  
    double py = 0.0,  
    double pz = 0.0) [inline]
```

Constructor.

Parameters: see member variables.

5.36.3 Member Data Documentation

5.36.3.1 x

```
double DL_LeaderVertexData::x
```

X Coordinate of the vertex.

Referenced by [DL_Dxf::writeLeaderVertex\(\)](#).

5.36.3.2 y

```
double DL_LeaderVertexData::y
```

Y Coordinate of the vertex.

Referenced by [DL_Dxf::writeLeaderVertex\(\)](#).

5.36.3.3 z

```
double DL_LeaderVertexData::z
```

Z Coordinate of the vertex.

The documentation for this struct was generated from the following file:

- [src/dl_entities.h](#)

5.37 DL_LineData Struct Reference

Line Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_LineData](#) (double lx1, double ly1, double lz1, double lx2, double ly2, double lz2)
Constructor.

Public Attributes

- double [x1](#)
- double [y1](#)
- double [z1](#)
- double [x2](#)
- double [y2](#)
- double [z2](#)

5.37.1 Detailed Description

Line Data.

5.37.2 Constructor & Destructor Documentation

5.37.2.1 DL_LineData()

```
DL_LineData::DL_LineData (  
    double lx1,  
    double ly1,  
    double lz1,  
    double lx2,  
    double ly2,  
    double lz2) [inline]
```

Constructor.

Parameters: see member variables.

5.37.3 Member Data Documentation

5.37.3.1 x1

```
double DL_LineData::x1
```

X Start coordinate of the point.

Referenced by [DL_Dxf::writeLine\(\)](#).

5.37.3.2 x2

```
double DL_LineData::x2
```

X End coordinate of the point.

Referenced by [DL_Dxf::writeLine\(\)](#).

5.37.3.3 y1

```
double DL_LineData::y1
```

Y Start coordinate of the point.

Referenced by [DL_Dxf::writeLine\(\)](#).

5.37.3.4 y2

```
double DL_LineData::y2
```

Y End coordinate of the point.

Referenced by [DL_Dxf::writeLine\(\)](#).

5.37.3.5 z1

```
double DL_LineData::z1
```

Z Start coordinate of the point.

Referenced by [DL_Dxf::writeLine\(\)](#).

5.37.3.6 z2

```
double DL_LineData::z2
```

Z End coordinate of the point.

Referenced by [DL_Dxf::writeLine\(\)](#).

The documentation for this struct was generated from the following file:

- `src/dl_entities.h`

5.38 DL_LinetypeData Struct Reference

Line Type Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_LinetypeData](#) (const std::string &name, const std::string &description, int flags, int numberOfDashes, double patternLength, double *pattern=NULL)

Constructor.

Public Attributes

- std::string **name**
Linetype name.
- std::string **description**
Linetype description.
- int **flags**
Linetype flags.
- int **numberOfDashes**
Number of dashes.
- double **patternLength**
Pattern length.
- double * **pattern**
Pattern.

5.38.1 Detailed Description

Line Type Data.

5.38.2 Constructor & Destructor Documentation

5.38.2.1 DL_LinetypeData()

```
DL_LinetypeData::DL_LinetypeData (  
    const std::string & name,  
    const std::string & description,  
    int flags,  
    int numberOfDashes,  
    double patternLength,  
    double * pattern = NULL) [inline]
```

Constructor.

Parameters: see member variables.

The documentation for this struct was generated from the following file:

- src/dl_entities.h

5.39 DL_MTextData Struct Reference

MText Data.

```
#include <dl_entities.h>
```

Public Member Functions

- `DL_MTextData` (double `ipx`, double `ipy`, double `ipz`, double `dirx`, double `diry`, double `dirz`, double `height`, double `width`, int `attachmentPoint`, int `drawingDirection`, int `lineSpacingStyle`, double `lineSpacingFactor`, const std::string &`text`, const std::string &`style`, double `angle`)

Constructor.

Public Attributes

- double `ipx`
- double `ipy`
- double `ipz`
- double `dirx`
- double `diry`
- double `dirz`
- double `height`
- double `width`
- int `attachmentPoint`
Attachment point.
- int `drawingDirection`
Drawing direction.
- int `lineSpacingStyle`
Line spacing style.
- double `lineSpacingFactor`
Line spacing factor.
- std::string `text`
- std::string `style`
- double `angle`

5.39.1 Detailed Description

MText Data.

5.39.2 Constructor & Destructor Documentation

5.39.2.1 DL_MTextData()

```
DL_MTextData::DL_MTextData (
    double ipx,
    double ipy,
    double ipz,
    double dirx,
    double diry,
    double dirz,
    double height,
    double width,
    int attachmentPoint,
    int drawingDirection,
    int lineSpacingStyle,
    double lineSpacingFactor,
    const std::string & text,
    const std::string & style,
    double angle) [inline]
```

Constructor.

Parameters: see member variables.

5.39.3 Member Data Documentation

5.39.3.1 angle

```
double DL_MTextData::angle
```

Rotation angle.

Referenced by [DL_Dxf::writeMText\(\)](#).

5.39.3.2 attachmentPoint

```
int DL_MTextData::attachmentPoint
```

Attachment point.

1 = Top left, 2 = Top center, 3 = Top right, 4 = Middle left, 5 = Middle center, 6 = Middle right, 7 = Bottom left, 8 = Bottom center, 9 = Bottom right

Referenced by [DL_Dxf::writeMText\(\)](#).

5.39.3.3 dirx

```
double DL_MTextData::dirx
```

X Coordinate of X direction vector.

5.39.3.4 diry

```
double DL_MTextData::diry
```

Y Coordinate of X direction vector.

5.39.3.5 dirz

```
double DL_MTextData::dirz
```

Z Coordinate of X direction vector.

5.39.3.6 drawingDirection

```
int DL_MTextData::drawingDirection
```

Drawing direction.

1 = left to right, 3 = top to bottom, 5 = by style

Referenced by [DL_Dxf::writeMText\(\)](#).

5.39.3.7 height

```
double DL_MTextData::height
```

Text height

Referenced by [DL_Dxf::writeMText\(\)](#).

5.39.3.8 ipx

```
double DL_MTextData::ipx
```

X Coordinate of insertion point.

Referenced by [DL_Dxf::writeMText\(\)](#).

5.39.3.9 ipy

```
double DL_MTextData::ipy
```

Y Coordinate of insertion point.

Referenced by [DL_Dxf::writeMText\(\)](#).

5.39.3.10 ipz

```
double DL_MTextData::ipz
```

Z Coordinate of insertion point.

Referenced by [DL_Dxf::writeMText\(\)](#).

5.39.3.11 lineSpacingFactor

```
double DL_MTextData::lineSpacingFactor
```

Line spacing factor.

0.25 .. 4.0

Referenced by [DL_Dxf::writeMText\(\)](#).

5.39.3.12 lineSpacingStyle

```
int DL_MTextData::lineSpacingStyle
```

Line spacing style.

1 = at least, 2 = exact

Referenced by [DL_Dxf::writeMText\(\)](#).

5.39.3.13 style

```
std::string DL_MTextData::style
```

Style string.

Referenced by [DL_Dxf::writeMText\(\)](#).

5.39.3.14 text

```
std::string DL_MTextData::text
```

Text string.

Referenced by [DL_Dxf::writeMText\(\)](#).

5.39.3.15 width

```
double DL_MTextData::width
```

Width of the text box.

Referenced by [DL_Dxf::writeMText\(\)](#).

The documentation for this struct was generated from the following file:

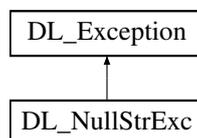
- [src/dl_entities.h](#)

5.40 DL_NullStrExc Class Reference

Used for exception handling.

```
#include <dl_exception.h>
```

Inheritance diagram for DL_NullStrExc:



5.40.1 Detailed Description

Used for exception handling.

The documentation for this class was generated from the following file:

- [src/dl_exception.h](#)

5.41 DL_PointData Struct Reference

Point Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_PointData](#) (double px=0.0, double py=0.0, double pz=0.0)
Constructor.

Public Attributes

- double [x](#)
- double [y](#)
- double [z](#)

5.41.1 Detailed Description

Point Data.

5.41.2 Constructor & Destructor Documentation

5.41.2.1 DL_PointData()

```
DL_PointData::DL_PointData (  
    double px = 0.0,  
    double py = 0.0,  
    double pz = 0.0) [inline]
```

Constructor.

Parameters: see member variables.

5.41.3 Member Data Documentation

5.41.3.1 x

```
double DL_PointData::x
```

X Coordinate of the point.

Referenced by [DL_Dxf::writePoint\(\)](#).

5.41.3.2 y

```
double DL_PointData::y
```

Y Coordinate of the point.

Referenced by [DL_Dxf::writePoint\(\)](#).

5.41.3.3 z

```
double DL_PointData::z
```

Z Coordinate of the point.

Referenced by [DL_Dxf::writePoint\(\)](#).

The documentation for this struct was generated from the following file:

- [src/dl_entities.h](#)

5.42 DL_PolylineData Struct Reference

Polyline Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_PolylineData](#) (int pNumber, int pMVerteces, int pNVerteces, int pFlags, double pElevation=0.0)
Constructor.

Public Attributes

- unsigned int [number](#)
- unsigned int [m](#)
- unsigned int [n](#)
- double [elevation](#)
- int [flags](#)

5.42.1 Detailed Description

Polyline Data.

5.42.2 Constructor & Destructor Documentation

5.42.2.1 DL_PolylineData()

```
DL_PolylineData::DL_PolylineData (  
    int pNumber,  
    int pMVerteces,  
    int pNVerteces,  
    int pFlags,  
    double pElevation = 0.0) [inline]
```

Constructor.

Parameters: see member variables.

5.42.3 Member Data Documentation

5.42.3.1 elevation

```
double DL_PolylineData::elevation
```

elevation of the polyline.

5.42.3.2 flags

```
int DL_PolylineData::flags
```

Flags

Referenced by [DL_Dxf::writePolyline\(\)](#).

5.42.3.3 m

```
unsigned int DL_PolylineData::m
```

Number of vertices in m direction if polyline is a polygon mesh.

5.42.3.4 n

```
unsigned int DL_PolylineData::n
```

Number of vertices in n direction if polyline is a polygon mesh.

5.42.3.5 number

```
unsigned int DL_PolylineData::number
```

Number of vertices in this polyline.

Referenced by [DL_Dxf::writePolyline\(\)](#).

The documentation for this struct was generated from the following file:

- `src/dl_entities.h`

5.43 DL_RayData Struct Reference

Ray Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_RayData](#) (double `bx`, double `by`, double `bz`, double `dx`, double `dy`, double `dz`)
Constructor.

Public Attributes

- double `bx`
- double `by`
- double `bz`
- double `dx`
- double `dy`
- double `dz`

5.43.1 Detailed Description

Ray Data.

5.43.2 Constructor & Destructor Documentation

5.43.2.1 DL_RayData()

```
DL_RayData::DL_RayData (  
    double bx,  
    double by,  
    double bz,  
    double dx,  
    double dy,  
    double dz) [inline]
```

Constructor.

Parameters: see member variables.

5.43.3 Member Data Documentation

5.43.3.1 bx

double DL_RayData::bx

X base point.

Referenced by [DL_Dxf::writeRay\(\)](#).

5.43.3.2 by

double DL_RayData::by

Y base point.

Referenced by [DL_Dxf::writeRay\(\)](#).

5.43.3.3 bz

double DL_RayData::bz

Z base point.

Referenced by [DL_Dxf::writeRay\(\)](#).

5.43.3.4 dx

double DL_RayData::dx

X direction vector.

Referenced by [DL_Dxf::writeRay\(\)](#).

5.43.3.5 dy

double DL_RayData::dy

Y direction vector.

Referenced by [DL_Dxf::writeRay\(\)](#).

5.43.3.6 dz

double DL_RayData::dz

Z direction vector.

Referenced by [DL_Dxf::writeRay\(\)](#).

The documentation for this struct was generated from the following file:

- [src/dl_entities.h](#)

5.44 DL_SplineData Struct Reference

Spline Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_SplineData](#) (int [degree](#), int [nKnots](#), int [nControl](#), int [nFit](#), int [flags](#))
Constructor.

Public Attributes

- unsigned int [degree](#)
- unsigned int [nKnots](#)
- unsigned int [nControl](#)
- unsigned int [nFit](#)
- int [flags](#)
- double [tangentStartX](#)
- double [tangentStartY](#)
- double [tangentStartZ](#)
- double [tangentEndX](#)
- double [tangentEndY](#)
- double [tangentEndZ](#)

5.44.1 Detailed Description

Spline Data.

5.44.2 Constructor & Destructor Documentation

5.44.2.1 DL_SplineData()

```
DL_SplineData::DL_SplineData (  
    int degree,  
    int nKnots,  
    int nControl,  
    int nFit,  
    int flags) [inline]
```

Constructor.

Parameters: see member variables.

5.44.3 Member Data Documentation

5.44.3.1 degree

```
unsigned int DL_SplineData::degree
```

Degree of the spline curve.

Referenced by [DL_Dxf::writeSpline\(\)](#).

5.44.3.2 flags

```
int DL_SplineData::flags
```

Flags

Referenced by [DL_Dxf::writeSpline\(\)](#).

5.44.3.3 nControl

```
unsigned int DL_SplineData::nControl
```

Number of control points.

Referenced by [DL_Dxf::writeSpline\(\)](#).

5.44.3.4 nFit

```
unsigned int DL_SplineData::nFit
```

Number of fit points.

Referenced by [DL_Dxf::writeSpline\(\)](#).

5.44.3.5 nKnots

```
unsigned int DL_SplineData::nKnots
```

Number of knots.

Referenced by [DL_Dxf::writeSpline\(\)](#).

The documentation for this struct was generated from the following file:

- `src/dl_entities.h`

5.45 DL_StyleData Struct Reference

Text style data.

```
#include <dl_entities.h>
```

Public Member Functions

- **DL_StyleData** (const std::string &name, int flags, double fixedTextHeight, double widthFactor, double obliqueAngle, int textGenerationFlags, double lastHeightUsed, const std::string &primaryFontFile, const std::string &bigFontFile)
Constructor Parameters: see member variables.
- bool **operator==** (const DL_StyleData &other)

Public Attributes

- std::string **name**
Style name.
- int **flags**
Style flags.
- double **fixedTextHeight**
Fixed text height or 0 for not fixed.
- double **widthFactor**
Width factor.
- double **obliqueAngle**
Oblique angle.
- int **textGenerationFlags**
Text generation flags.
- double **lastHeightUsed**
Last height used.
- std::string **primaryFontFile**
Primary font file name.
- std::string **bigFontFile**
Big font file name.
- bool **bold**
- bool **italic**

5.45.1 Detailed Description

Text style data.

The documentation for this struct was generated from the following file:

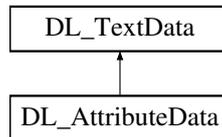
- src/dl_entities.h

5.46 DL_TextData Struct Reference

Text Data.

```
#include <dl_entities.h>
```

Inheritance diagram for DL_TextData:



Public Member Functions

- [DL_TextData](#) (double [ipx](#), double [ipy](#), double [ipz](#), double [apx](#), double [apy](#), double [apz](#), double [height](#), double [xScaleFactor](#), int [textGenerationFlags](#), int [hJustification](#), int [vJustification](#), const std::string &[text](#), const std::string &[style](#), double [angle](#))

Constructor.

Public Attributes

- double [ipx](#)
- double [ipy](#)
- double [ipz](#)
- double [apx](#)
- double [apy](#)
- double [apz](#)
- double [height](#)
- double [xScaleFactor](#)
- int [textGenerationFlags](#)
- int [hJustification](#)
Horizontal justification.
- int [vJustification](#)
Vertical justification.
- std::string [text](#)
- std::string [style](#)
- double [angle](#)

5.46.1 Detailed Description

Text Data.

5.46.2 Constructor & Destructor Documentation

5.46.2.1 DL_TextData()

```
DL_TextData::DL_TextData (  
    double ipx,  
    double ipy,  
    double ipz,  
    double apx,  
    double apy,  
    double apz,  
    double height,  
    double xScaleFactor,  
    int textGenerationFlags,  
    int hJustification,  
    int vJustification,  
    const std::string & text,  
    const std::string & style,  
    double angle) [inline]
```

Constructor.

Parameters: see member variables.

5.46.3 Member Data Documentation

5.46.3.1 angle

```
double DL_TextData::angle
```

Rotation angle of dimension text away from default orientation.

Referenced by [DL_Dxf::writeText\(\)](#).

5.46.3.2 apx

```
double DL_TextData::apx
```

X Coordinate of alignment point.

Referenced by [DL_Dxf::writeText\(\)](#).

5.46.3.3 apy

```
double DL_TextData::apy
```

Y Coordinate of alignment point.

Referenced by [DL_Dxf::writeText\(\)](#).

5.46.3.4 apz

```
double DL_TextData::apz
```

Z Coordinate of alignment point.

Referenced by [DL_Dxf::writeText\(\)](#).

5.46.3.5 height

```
double DL_TextData::height
```

Text height

Referenced by [DL_Dxf::writeText\(\)](#).

5.46.3.6 hJustification

```
int DL_TextData::hJustification
```

Horizontal justification.

0 = Left (default), 1 = Center, 2 = Right, 3 = Aligned, 4 = Middle, 5 = Fit For 3, 4, 5 the vertical alignment has to be 0.

Referenced by [DL_Dxf::writeText\(\)](#).

5.46.3.7 ipx

```
double DL_TextData::ipx
```

X Coordinate of insertion point.

Referenced by [DL_Dxf::writeText\(\)](#).

5.46.3.8 ipy

```
double DL_TextData::ipy
```

Y Coordinate of insertion point.

Referenced by [DL_Dxf::writeText\(\)](#).

5.46.3.9 ipz

```
double DL_TextData::ipz
```

Z Coordinate of insertion point.

Referenced by [DL_Dxf::writeText\(\)](#).

5.46.3.10 style

```
std::string DL_TextData::style
```

Style (font).

Referenced by [DL_Dxf::writeText\(\)](#).

5.46.3.11 text

```
std::string DL_TextData::text
```

Text string.

Referenced by [DL_Dxf::writeText\(\)](#).

5.46.3.12 textGenerationFlags

```
int DL_TextData::textGenerationFlags
```

0 = default, 2 = Backwards, 4 = Upside down

Referenced by [DL_Dxf::writeText\(\)](#).

5.46.3.13 vJustification

```
int DL_TextData::vJustification
```

Vertical justification.

0 = Baseline (default), 1 = Bottom, 2 = Middle, 3= Top

Referenced by [DL_Dxf::writeText\(\)](#).

5.46.3.14 xScaleFactor

```
double DL_TextData::xScaleFactor
```

Relative X scale factor.

Referenced by [DL_Dxf::writeText\(\)](#).

The documentation for this struct was generated from the following file:

- `src/dl_entities.h`

5.47 DL_TraceData Struct Reference

Trace Data / solid data / 3d face data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_TraceData](#) (double *sx1*, double *sy1*, double *sz1*, double *sx2*, double *sy2*, double *sz2*, double *sx3*, double *sy3*, double *sz3*, double *sx4*, double *sy4*, double *sz4*, double *sthickness*=0.0)

Constructor.

Public Attributes

- double [thickness](#)
- double [x](#) [4]
- double [y](#) [4]
- double [z](#) [4]

5.47.1 Detailed Description

Trace Data / solid data / 3d face data.

5.47.2 Constructor & Destructor Documentation

5.47.2.1 DL_TraceData()

```
DL_TraceData::DL_TraceData (  
    double sx1,  
    double sy1,  
    double sz1,  
    double sx2,  
    double sy2,  
    double sz2,  
    double sx3,  
    double sy3,  
    double sz3,  
    double sx4,  
    double sy4,  
    double sz4,  
    double sthickness = 0.0) [inline]
```

Constructor.

Parameters: see member variables.

5.47.3 Member Data Documentation

5.47.3.1 thickness

```
double DL_TraceData::thickness
```

Thickness

Referenced by [DL_Dxf::writeSolid\(\)](#), and [DL_Dxf::writeTrace\(\)](#).

5.47.3.2 x

```
double DL_TraceData::x[4]
```

Points

Referenced by [DL_Dxf::add3dFace\(\)](#), [DL_Dxf::addSolid\(\)](#), [DL_Dxf::addTrace\(\)](#), [DL_Dxf::write3dFace\(\)](#), [DL_Dxf::writeSolid\(\)](#), and [DL_Dxf::writeTrace\(\)](#).

The documentation for this struct was generated from the following file:

- [src/dl_entities.h](#)

5.48 DL_VertexData Struct Reference

Vertex Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_VertexData](#) (double px=0.0, double py=0.0, double pz=0.0, double pBulge=0.0)
Constructor.

Public Attributes

- double [x](#)
- double [y](#)
- double [z](#)
- double [bulge](#)

5.48.1 Detailed Description

Vertex Data.

5.48.2 Constructor & Destructor Documentation

5.48.2.1 DL_VertexData()

```
DL_VertexData::DL_VertexData (
    double px = 0.0,
    double py = 0.0,
    double pz = 0.0,
    double pBulge = 0.0) [inline]
```

Constructor.

Parameters: see member variables.

5.48.3 Member Data Documentation

5.48.3.1 bulge

```
double DL_VertexData::bulge
```

Bulge of vertex. (The tangent of 1/4 of the arc angle or 0 for lines)

Referenced by [DL_Dxf::writeVertex\(\)](#).

5.48.3.2 x

```
double DL_VertexData::x
```

X Coordinate of the vertex.

Referenced by [DL_Dxf::writeVertex\(\)](#).

5.48.3.3 y

```
double DL_VertexData::y
```

Y Coordinate of the vertex.

Referenced by [DL_Dxf::writeVertex\(\)](#).

5.48.3.4 z

```
double DL_VertexData::z
```

Z Coordinate of the vertex.

Referenced by [DL_Dxf::writeVertex\(\)](#).

The documentation for this struct was generated from the following file:

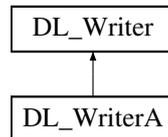
- [src/dl_entities.h](#)

5.49 DL_Writer Class Reference

Defines interface for writing low level DXF constructs to a file.

```
#include <dl_writer.h>
```

Inheritance diagram for DL_Writer:



Public Member Functions

- [DL_Writer](#) ([DL_Codes::version](#) version)
- void [section](#) (const char *name) const
Generic section for section 'name'.
- void [sectionHeader](#) () const
Section HEADER.
- void [sectionTables](#) () const
Section TABLES.
- void [sectionBlocks](#) () const
Section BLOCKS.
- void [sectionEntities](#) () const
Section ENTITIES.
- void [sectionClasses](#) () const
Section CLASSES.
- void [sectionObjects](#) () const
Section OBJECTS.
- void [sectionEnd](#) () const
End of a section.
- void [table](#) (const char *name, int num, int h=0) const
Generic table for table 'name' with 'num' entries:
- void [tableLayers](#) (int num) const
Table for layers.
- void [tableLinetypes](#) (int num) const
Table for line types.
- void [tableAppid](#) (int num) const
Table for application id.
- void [tableStyle](#) (int num) const
Table for text style.
- void [tableEnd](#) () const
End of a table.
- void [dxfEOF](#) () const
End of the DXF file.
- void [comment](#) (const char *text) const
Comment.
- void [entity](#) (const char *entTypeName) const

- *Entity.*
- void [entityAttributes](#) (const [DL_Attributes](#) &attrib) const
Attributes of an entity.
- void **subClass** (const char *sub) const
Subclass.
- void [tableLayerEntry](#) (unsigned long int h=0) const
Layer (must be in the TABLES section LAYER).
- void [tableLinetypeEntry](#) (unsigned long int h=0) const
Line type (must be in the TABLES section LTYPE).
- void [tableAppidEntry](#) (unsigned long int h=0) const
Appid (must be in the TABLES section APPID).
- void [sectionBlockEntry](#) (unsigned long int h=0) const
Block (must be in the section BLOCKS).
- void [sectionBlockEntryEnd](#) (unsigned long int h=0) const
End of Block (must be in the section BLOCKS).
- void **color** (int col=256) const
- void **linetype** (const char *lt) const
- void **linetypeScale** (double scale) const
- void **lineWeight** (int lw) const
- void **coord** (int gc, double x, double y, double z=0) const
- void **coordTriplet** (int gc, const double *value) const
- void **resetHandle** () const
- unsigned long **handle** (int gc=5) const
Writes a unique handle and returns it.
- unsigned long [getNextHandle](#) () const
- virtual void [dxfReal](#) (int gc, double value) const =0
Must be overwritten by the implementing class to write a real value to the file.
- virtual void [dxflnt](#) (int gc, int value) const =0
Must be overwritten by the implementing class to write an int value to the file.
- virtual void [dxfBool](#) (int gc, bool value) const
Can be overwritten by the implementing class to write a bool value to the file.
- virtual void [dxfHex](#) (int gc, int value) const =0
Must be overwritten by the implementing class to write an int value (hex) to the file.
- virtual void [dxfString](#) (int gc, const char *value) const =0
Must be overwritten by the implementing class to write a string to the file.
- virtual void [dxfString](#) (int gc, const std::string &value) const =0
Must be overwritten by the implementing class to write a string to the file.

Protected Attributes

- unsigned long **m_handle**
- unsigned long **modelSpaceHandle**
- unsigned long **paperSpaceHandle**
- unsigned long **paperSpace0Handle**
- [DL_Codes::version](#) **version**
DXF version to be created.

5.49.1 Detailed Description

Defines interface for writing low level DXF constructs to a file.

Implementation is defined in derived classes that write to binary or ASCII files.

Implements functions that write higher level constructs in terms of the low level ones.

Todo Add error checking for string/entry length.

5.49.2 Constructor & Destructor Documentation

5.49.2.1 DL_Writer()

```
DL_Writer::DL_Writer (
    DL_Codes::version version) [inline]
```

Parameters

<i>version</i>	DXF version. Defaults to DL_VERSION_2002.
----------------	---

5.49.3 Member Function Documentation

5.49.3.1 comment()

```
void DL_Writer::comment (
    const char * text) const [inline]
```

Comment.

```
999
text
```

Referenced by [DL_Dxf::writeHeader\(\)](#).

5.49.3.2 dxfBool()

```
virtual void DL_Writer::dxfBool (
    int gc,
    bool value) const [inline], [virtual]
```

Can be overwritten by the implementing class to write a bool value to the file.

Parameters

<i>gc</i>	Group code.
<i>value</i>	The bool value.

Referenced by [DL_Dxf::writeHatchEdge\(\)](#).

5.49.3.3 dxfeof()

```
void DL_Writer::dxfeof () const [inline]
```

End of the DXF file.

```
0  
EOF
```

5.49.3.4 dxhex()

```
virtual void DL_Writer::dxhex (  
    int gc,  
    int value) const [pure virtual]
```

Must be overwritten by the implementing class to write an int value (hex) to the file.

Parameters

<i>gc</i>	Group code.
<i>value</i>	The int value.

Implemented in [DL_WriterA](#).

5.49.3.5 dxflint()

```
virtual void DL_Writer::dxflint (  
    int gc,  
    int value) const [pure virtual]
```

Must be overwritten by the implementing class to write an int value to the file.

Parameters

<i>gc</i>	Group code.
<i>value</i>	The int value.

Implemented in [DL_WriterA](#).

5.49.3.6 dxreal()

```
virtual void DL_Writer::dxreal (  
    int gc,  
    double value) const [pure virtual]
```

Must be overwritten by the implementing class to write a real value to the file.

Parameters

<i>gc</i>	Group code.
<i>value</i>	The real value.

Implemented in [DL_WriterA](#).

5.49.3.7 dxfString() [1/2]

```
virtual void DL_Writer::dxfString (
    int gc,
    const char * value) const [pure virtual]
```

Must be overwritten by the implementing class to write a string to the file.

Parameters

<i>gc</i>	Group code.
<i>value</i>	The string.

Implemented in [DL_WriterA](#).

5.49.3.8 dxfString() [2/2]

```
virtual void DL_Writer::dxfString (
    int gc,
    const std::string & value) const [pure virtual]
```

Must be overwritten by the implementing class to write a string to the file.

Parameters

<i>gc</i>	Group code.
<i>value</i>	The string.

Implemented in [DL_WriterA](#).

5.49.3.9 entity()

```
void DL_Writer::entity (
    const char * entTypeName) const [inline]
```

Entity.

```
0
entTypeName
```

Returns

Unique handle or 0.

Referenced by [DL_Dxf::write3dFace\(\)](#), [DL_Dxf::writeArc\(\)](#), [DL_Dxf::writeCircle\(\)](#), [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), [DL_Dxf::writeDimRadial\(\)](#), [DL_Dxf::writeEllipse\(\)](#), [DL_Dxf::writeHatch1\(\)](#), [DL_Dxf::writeImage\(\)](#), [DL_Dxf::writeInsert\(\)](#), [DL_Dxf::writeLeader\(\)](#), [DL_Dxf::writeLine\(\)](#), [DL_Dxf::writeMText\(\)](#), [DL_Dxf::writePoint\(\)](#), [DL_Dxf::writePolyline\(\)](#), [DL_Dxf::writePolylineEnd\(\)](#), [DL_Dxf::writeRay\(\)](#), [DL_Dxf::writeSolid\(\)](#), [DL_Dxf::writeSpline\(\)](#), [DL_Dxf::writeText\(\)](#), [DL_Dxf::writeTrace\(\)](#), [DL_Dxf::writeVertex\(\)](#), and [DL_Dxf::writeXLine\(\)](#).

5.49.3.10 entityAttributes()

```
void DL_Writer::entityAttributes (
    const DL_Attributes & attrib) const [inline]
```

Attributes of an entity.

```
8
layer
62
color
39
width
6
linetype
```

References [DL_Attributes::getColor\(\)](#), [DL_Attributes::getColor24\(\)](#), [DL_Attributes::getLayer\(\)](#), [DL_Attributes::getLinetype\(\)](#), and [DL_Attributes::getWidth\(\)](#).

Referenced by [DL_Dxf::write3dFace\(\)](#), [DL_Dxf::writeArc\(\)](#), [DL_Dxf::writeCircle\(\)](#), [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), [DL_Dxf::writeDimRadial\(\)](#), [DL_Dxf::writeEllipse\(\)](#), [DL_Dxf::writeHatch1\(\)](#), [DL_Dxf::writeImage\(\)](#), [DL_Dxf::writeInsert\(\)](#), [DL_Dxf::writeLeader\(\)](#), [DL_Dxf::writeLine\(\)](#), [DL_Dxf::writeMText\(\)](#), [DL_Dxf::writePoint\(\)](#), [DL_Dxf::writePolyline\(\)](#), [DL_Dxf::writeRay\(\)](#), [DL_Dxf::writeSolid\(\)](#), [DL_Dxf::writeSpline\(\)](#), [DL_Dxf::writeText\(\)](#), [DL_Dxf::writeTrace\(\)](#), and [DL_Dxf::writeXLine\(\)](#).

5.49.3.11 getNextHandle()

```
unsigned long DL_Writer::getNextHandle () const [inline]
```

Returns

Next handle that will be written.

Referenced by [DL_Dxf::writeObjects\(\)](#).

5.49.3.12 section()

```
void DL_Writer::section (
    const char * name) const [inline]
```

Generic section for section 'name'.

```
0
SECTION
2
name
```

5.49.3.13 sectionBlockEntry()

```
void DL_Writer::sectionBlockEntry (
    unsigned long int h = 0) const [inline]
```

Block (must be in the section BLOCKS).

```
0
BLOCK
```

Referenced by [DL_Dxf::writeBlock\(\)](#).

5.49.3.14 sectionBlockEntryEnd()

```
void DL_Writer::sectionBlockEntryEnd (
    unsigned long int h = 0) const [inline]
```

End of Block (must be in the section BLOCKS).

```
0
ENDBLK
```

Referenced by [DL_Dxf::writeEndBlock\(\)](#).

5.49.3.15 sectionBlocks()

```
void DL_Writer::sectionBlocks () const [inline]
```

Section BLOCKS.

```
0
SECTION
2
BLOCKS
```

5.49.3.16 sectionClasses()

```
void DL_Writer::sectionClasses () const [inline]
```

Section CLASSES.

```
0
SECTION
2
CLASSES
```

5.49.3.17 sectionEnd()

```
void DL_Writer::sectionEnd () const [inline]
```

End of a section.

```
0  
ENDSEC
```

5.49.3.18 sectionEntities()

```
void DL_Writer::sectionEntities () const [inline]
```

Section ENTITIES.

```
0  
SECTION  
2  
ENTITIES
```

5.49.3.19 sectionHeader()

```
void DL_Writer::sectionHeader () const [inline]
```

Section HEADER.

```
0  
SECTION  
2  
HEADER
```

Referenced by [DL_Dxf::writeHeader\(\)](#).

5.49.3.20 sectionObjects()

```
void DL_Writer::sectionObjects () const [inline]
```

Section OBJECTS.

```
0  
SECTION  
2  
OBJECTS
```

5.49.3.21 sectionTables()

```
void DL_Writer::sectionTables () const [inline]
```

Section TABLES.

```
0
SECTION
2
TABLES
```

5.49.3.22 table()

```
void DL_Writer::table (
    const char * name,
    int num,
    int h = 0) const [inline]
```

Generic table for table 'name' with 'num' entries:

```
0
TABLE
2
name
70
num
```

5.49.3.23 tableAppid()

```
void DL_Writer::tableAppid (
    int num) const [inline]
```

Table for application id.

Parameters

<i>num</i>	Number of registered applications in total.
------------	---

```
0
TABLE
2
APPID
70
    num
```

5.49.3.24 tableAppidEntry()

```
void DL_Writer::tableAppidEntry (
    unsigned long int h = 0) const [inline]
```

Appid (must be in the TABLES section APPID).

```
0
APPID
```

Referenced by [DL_Dxf::writeAppid\(\)](#).

5.49.3.25 tableEnd()

```
void DL_Writer::tableEnd () const [inline]
```

End of a table.

```
0
ENDTAB
```

5.49.3.26 tableLayerEntry()

```
void DL_Writer::tableLayerEntry (
    unsigned long int h = 0) const [inline]
```

Layer (must be in the TABLES section LAYER).

```
0
LAYER
```

Referenced by [DL_Dxf::writeLayer\(\)](#).

5.49.3.27 tableLayers()

```
void DL_Writer::tableLayers (
    int num) const [inline]
```

Table for layers.

Parameters

<i>num</i>	Number of layers in total.
------------	----------------------------

```
0
TABLE
2
LAYER
70
    num
```

5.49.3.28 tableLinetypeEntry()

```
void DL_Writer::tableLinetypeEntry (
    unsigned long int h = 0) const [inline]
```

Line type (must be in the TABLES section LTYPE).

```
0
LTYPE
```

Referenced by [DL_Dxf::writeLinetype\(\)](#).

5.49.3.29 tableLinetypes()

```
void DL_Writer::tableLinetypes (
    int num) const [inline]
```

Table for line types.

Parameters

<i>num</i>	Number of line types in total.
------------	--------------------------------

```
0
TABLE
2
LTYPE
70
num
```

5.49.3.30 tableStyle()

```
void DL_Writer::tableStyle (
    int num) const [inline]
```

Table for text style.

Parameters

<i>num</i>	Number of text styles.
------------	------------------------

```
0
TABLE
2
STYLE
70
num
```

The documentation for this class was generated from the following file:

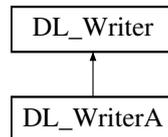
- `src/dl_writer.h`

5.50 DL_WriterA Class Reference

Implements functions defined in [DL_Writer](#) for writing low level DXF constructs to an ASCII format DXF file.

```
#include <dl_writer_ascii.h>
```

Inheritance diagram for DL_WriterA:



Public Member Functions

- **DL_WriterA** (const char *fname, [DL_Codes::version version](#)=DL_VERSION_2000)
- bool [openFailed](#) () const
- void **close** () const
Closes the output file.
- void [dxfReal](#) (int gc, double value) const
Writes a real (double) variable to the DXF file.
- void [dxflnt](#) (int gc, int value) const
Writes an int variable to the DXF file.
- void [dxfHex](#) (int gc, int value) const
Writes a hex int variable to the DXF file.
- void [dxfString](#) (int gc, const char *value) const
Writes a string variable to the DXF file.
- void [dxfString](#) (int gc, const std::string &value) const
Must be overwritten by the implementing class to write a string to the file.

Public Member Functions inherited from [DL_Writer](#)

- [DL_Writer](#) ([DL_Codes::version version](#))
- void [section](#) (const char *name) const
Generic section for section 'name'.
- void [sectionHeader](#) () const
Section HEADER.
- void [sectionTables](#) () const
Section TABLES.
- void [sectionBlocks](#) () const
Section BLOCKS.
- void [sectionEntities](#) () const
Section ENTITIES.
- void [sectionClasses](#) () const
Section CLASSES.
- void [sectionObjects](#) () const
Section OBJECTS.
- void [sectionEnd](#) () const
End of a section.

- void **table** (const char *name, int num, int h=0) const
Generic table for table 'name' with 'num' entries:
- void **tableLayers** (int num) const
Table for layers.
- void **tableLinetypes** (int num) const
Table for line types.
- void **tableAppid** (int num) const
Table for application id.
- void **tableStyle** (int num) const
Table for text style.
- void **tableEnd** () const
End of a table.
- void **dxEOF** () const
End of the DXF file.
- void **comment** (const char *text) const
Comment.
- void **entity** (const char *entTypeName) const
Entity.
- void **entityAttributes** (const DL_Attributes &attrib) const
Attributes of an entity.
- void **subClass** (const char *sub) const
Subclass.
- void **tableLayerEntry** (unsigned long int h=0) const
Layer (must be in the TABLES section LAYER).
- void **tableLinetypeEntry** (unsigned long int h=0) const
Line type (must be in the TABLES section LTYPE).
- void **tableAppidEntry** (unsigned long int h=0) const
Appid (must be in the TABLES section APPID).
- void **sectionBlockEntry** (unsigned long int h=0) const
Block (must be in the section BLOCKS).
- void **sectionBlockEntryEnd** (unsigned long int h=0) const
End of Block (must be in the section BLOCKS).
- void **color** (int col=256) const
- void **linetype** (const char *lt) const
- void **linetypeScale** (double scale) const
- void **lineWeight** (int lw) const
- void **coord** (int gc, double x, double y, double z=0) const
- void **coordTriplet** (int gc, const double *value) const
- void **resetHandle** () const
- unsigned long **handle** (int gc=5) const
Writes a unique handle and returns it.
- unsigned long **getNextHandle** () const
- virtual void **dxfBool** (int gc, bool value) const
Can be overwritten by the implementing class to write a bool value to the file.

Static Public Member Functions

- static void **strReplace** (char *str, char src, char dest)
Replaces every occurrence of src with dest in the null terminated str.

Additional Inherited Members

Protected Attributes inherited from [DL_Writer](#)

- unsigned long **m_handle**
- unsigned long **modelSpaceHandle**
- unsigned long **paperSpaceHandle**
- unsigned long **paperSpace0Handle**
- [DL_Codes::version](#) **version**

DXF version to be created.

5.50.1 Detailed Description

Implements functions defined in [DL_Writer](#) for writing low level DXF constructs to an ASCII format DXF file.

@para fname File name of the file to be created. @para version DXF version. Defaults to DL_VERSION_2002.

Todo What if `fname` is NULL? Or `fname` can't be opened for another reason?

5.50.2 Member Function Documentation

5.50.2.1 `dxHex()`

```
void DL_WriterA::dxHex (
    int gc,
    int value) const [virtual]
```

Writes a hex int variable to the DXF file.

Parameters

<i>gc</i>	Group code.
<i>value</i>	Int value

Implements [DL_Writer](#).

References [dxfString\(\)](#).

Referenced by [DL_Dxf::writeBlockRecord\(\)](#), [DL_Dxf::writeBlockRecord\(\)](#), [DL_Dxf::writeDimStyle\(\)](#), [DL_Dxf::writeHeader\(\)](#), [DL_Dxf::writeImageDef\(\)](#), [DL_Dxf::writeLayer\(\)](#), [DL_Dxf::writeObjects\(\)](#), [DL_Dxf::writeUcs\(\)](#), [DL_Dxf::writeView\(\)](#), and [DL_Dxf::writeVPort\(\)](#).

5.50.2.2 `dxInt()`

```
void DL_WriterA::dxInt (
    int gc,
    int value) const [virtual]
```

Writes an int variable to the DXF file.

Parameters

<i>gc</i>	Group code.
<i>value</i>	Int value

Implements [DL_Writer](#).

Referenced by [DL_Dxf::writeAppid\(\)](#), [DL_Dxf::writeBlock\(\)](#), [DL_Dxf::writeBlockRecord\(\)](#), [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), [DL_Dxf::writeDimRadial\(\)](#), [DL_Dxf::writeDimStyle\(\)](#), [DL_Dxf::writeHatch1\(\)](#), [DL_Dxf::writeHatch2\(\)](#), [DL_Dxf::writeHatchEdge\(\)](#), [DL_Dxf::writeHatchLoop1\(\)](#), [DL_Dxf::writeHatchLoop2\(\)](#), [DL_Dxf::writeImage\(\)](#), [DL_Dxf::writeImageDef\(\)](#), [DL_Dxf::writeInsert\(\)](#), [DL_Dxf::writeLayer\(\)](#), [DL_Dxf::writeLeader\(\)](#), [DL_Dxf::writeLinetype\(\)](#), [DL_Dxf::writeMText\(\)](#), [DL_Dxf::writeObjects\(\)](#), [DL_Dxf::writePolyline\(\)](#), [DL_Dxf::writeSpline\(\)](#), [DL_Dxf::writeStyle\(\)](#), [DL_Dxf::writeText\(\)](#), [DL_Dxf::writeUcs\(\)](#), [DL_Dxf::writeView\(\)](#), and [DL_Dxf::writeVPort\(\)](#).

5.50.2.3 dxfReal()

```
void DL_WriterA::dxfReal (
    int gc,
    double value) const [virtual]
```

Writes a real (double) variable to the DXF file.

Parameters

<i>gc</i>	Group code.
<i>value</i>	Double value

Implements [DL_Writer](#).

References [dxfString\(\)](#), [strReplace\(\)](#), and [DL_Writer::version](#).

Referenced by [DL_Dxf::writeArc\(\)](#), [DL_Dxf::writeCircle\(\)](#), [DL_Dxf::writeControlPoint\(\)](#), [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), [DL_Dxf::writeDimRadial\(\)](#), [DL_Dxf::writeDimStyle\(\)](#), [DL_Dxf::writeEllipse\(\)](#), [DL_Dxf::writeFitPoint\(\)](#), [DL_Dxf::writeHatch1\(\)](#), [DL_Dxf::writeHatch2\(\)](#), [DL_Dxf::writeHatchEdge\(\)](#), [DL_Dxf::writeImage\(\)](#), [DL_Dxf::writeImageDef\(\)](#), [DL_Dxf::writeInsert\(\)](#), [DL_Dxf::writeKnot\(\)](#), [DL_Dxf::writeLeader\(\)](#), [DL_Dxf::writeLeaderVertex\(\)](#), [DL_Dxf::writeLinetype\(\)](#), [DL_Dxf::writeMText\(\)](#), [DL_Dxf::writeObjects\(\)](#), [DL_Dxf::writeSolid\(\)](#), [DL_Dxf::writeStyle\(\)](#), [DL_Dxf::writeText\(\)](#), [DL_Dxf::writeTrace\(\)](#), [DL_Dxf::writeVertex\(\)](#), and [DL_Dxf::writeVPort\(\)](#).

5.50.2.4 dxfString() [1/2]

```
void DL_WriterA::dxfString (
    int gc,
    const char * value) const [virtual]
```

Writes a string variable to the DXF file.

Parameters

<i>gc</i>	Group code.
<i>value</i>	String

Implements [DL_Writer](#).

Referenced by [dxHex\(\)](#), [dxReal\(\)](#), [DL_Dxf::write3dFace\(\)](#), [DL_Dxf::writeAppid\(\)](#), [DL_Dxf::writeArc\(\)](#), [DL_Dxf::writeBlock\(\)](#), [DL_Dxf::writeBlockRecord\(\)](#), [DL_Dxf::writeBlockRecord\(\)](#), [DL_Dxf::writeCircle\(\)](#), [DL_Dxf::writeComment\(\)](#), [DL_Dxf::writeDimAligned\(\)](#), [DL_Dxf::writeDimAngular2L\(\)](#), [DL_Dxf::writeDimAngular3P\(\)](#), [DL_Dxf::writeDimDiametric\(\)](#), [DL_Dxf::writeDimLinear\(\)](#), [DL_Dxf::writeDimOrdinate\(\)](#), [DL_Dxf::writeDimRadial\(\)](#), [DL_Dxf::writeDimStyle\(\)](#), [DL_Dxf::writeEllipse\(\)](#), [DL_Dxf::writeHatch1\(\)](#), [DL_Dxf::writeHatch2\(\)](#), [DL_Dxf::writeHeader\(\)](#), [DL_Dxf::writeImage\(\)](#), [DL_Dxf::writeImageDef\(\)](#), [DL_Dxf::writeInsert\(\)](#), [DL_Dxf::writeLayer\(\)](#), [DL_Dxf::writeLeader\(\)](#), [DL_Dxf::writeLine\(\)](#), [DL_Dxf::writeLinetype\(\)](#), [DL_Dxf::writeMText\(\)](#), [DL_Dxf::writeObjects\(\)](#), [DL_Dxf::writeObjectsEnd\(\)](#), [DL_Dxf::writePoint\(\)](#), [DL_Dxf::writePolyline\(\)](#), [DL_Dxf::writeRay\(\)](#), [DL_Dxf::writeSolid\(\)](#), [DL_Dxf::writeSpline\(\)](#), [DL_Dxf::writeStyle\(\)](#), [DL_Dxf::writeText\(\)](#), [DL_Dxf::writeTrace\(\)](#), [DL_Dxf::writeUcs\(\)](#), [DL_Dxf::writeVertex\(\)](#), [DL_Dxf::writeView\(\)](#), [DL_Dxf::writeVPort\(\)](#), and [DL_Dxf::writeXLine\(\)](#).

5.50.2.5 dxString() [2/2]

```
void DL_WriterA::dxString (
    int gc,
    const std::string & value) const [virtual]
```

Must be overwritten by the implementing class to write a string to the file.

Parameters

<i>gc</i>	Group code.
<i>value</i>	The string.

Implements [DL_Writer](#).

5.50.2.6 openFailed()

```
bool DL_WriterA::openFailed () const
```

Return values

<i>true</i>	Opening file has failed.
<i>false</i>	Otherwise.

Referenced by [DL_Dxf::out\(\)](#).

The documentation for this class was generated from the following files:

- [src/dl_writer_ascii.h](#)
- [src/dl_writer_ascii.cpp](#)

5.51 DL_XLineData Struct Reference

XLine Data.

```
#include <dl_entities.h>
```

Public Member Functions

- [DL_XLineData](#) (double [bx](#), double [by](#), double [bz](#), double [dx](#), double [dy](#), double [dz](#))
Constructor.

Public Attributes

- double [bx](#)
- double [by](#)
- double [bz](#)
- double [dx](#)
- double [dy](#)
- double [dz](#)

5.51.1 Detailed Description

XLine Data.

5.51.2 Constructor & Destructor Documentation

5.51.2.1 DL_XLineData()

```
DL_XLineData::DL_XLineData (  
    double bx,  
    double by,  
    double bz,  
    double dx,  
    double dy,  
    double dz) [inline]
```

Constructor.

Parameters: see member variables.

5.51.3 Member Data Documentation

5.51.3.1 [bx](#)

```
double DL_XLineData::bx
```

X base point.

Referenced by [DL_Dxf::writeXLine\(\)](#).

5.51.3.2 by

double DL_XLineData::by

Y base point.

Referenced by [DL_Dxf::writeXLine\(\)](#).

5.51.3.3 bz

double DL_XLineData::bz

Z base point.

Referenced by [DL_Dxf::writeXLine\(\)](#).

5.51.3.4 dx

double DL_XLineData::dx

X direction vector.

Referenced by [DL_Dxf::writeXLine\(\)](#).

5.51.3.5 dy

double DL_XLineData::dy

Y direction vector.

Referenced by [DL_Dxf::writeXLine\(\)](#).

5.51.3.6 dz

double DL_XLineData::dz

Z direction vector.

Referenced by [DL_Dxf::writeXLine\(\)](#).

The documentation for this struct was generated from the following file:

- [src/dl_entities.h](#)

Chapter 6

File Documentation

6.1 dl_attributes.h

```
00001 /*****
00002 ** Copyright (C) 2001-2013 RibbonSoft, GmbH. All rights reserved.
00003 **
00004 ** This file is part of the dxflib project.
00005 **
00006 ** This file is free software; you can redistribute it and/or modify
00007 ** it under the terms of the GNU General Public License as published by
00008 ** the Free Software Foundation; either version 2 of the License, or
00009 ** (at your option) any later version.
00010 **
00011 ** Licensees holding valid dxflib Professional Edition licenses may use
00012 ** this file in accordance with the dxflib Commercial License
00013 ** Agreement provided with the Software.
00014 **
00015 ** This file is provided AS IS with NO WARRANTY OF ANY KIND, INCLUDING THE
00016 ** WARRANTY OF DESIGN, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
00017 **
00018 ** See http://www.ribbonsoft.com for further details.
00019 **
00020 ** Contact info@ribbonsoft.com if any conditions of this licensing are
00021 ** not clear to you.
00022 **
00023 *****/
00024
00025 #ifndef DL_ATTRIBUTES_H
00026 #define DL_ATTRIBUTES_H
00027
00028 #include "dl_global.h"
00029
00030 #include <string>
00031 #include <vector>
00032
00033 #include "dl_codes.h"
00034
00041 class DXFLIB_EXPORT DL_Attributes {
00042 public:
00043     DL_Attributes() :
00044         layer(""),
00045         color(0),
00051         color24(-1),
00052         width(0),
00053         linetype("BYLAYER"),
00054         linetypeScale(1.0),
00055         handle(-1),
00056         inPaperSpace(false) {
00057     }
00058
00070     DL_Attributes(const std::string& layer,
00071                 int color, int width,
00072                 const std::string& linetype,
00073                 double linetypeScale) :
00074         layer(layer),
00075         color(color),
00076         color24(-1),
00077         width(width),
00078         linetype(linetype),
```

```
00079         linetypeScale(linetypeScale),
00080         handle(-1),
00081         inPaperSpace(false) {
00082     }
00083 }
00084
00097 DL_Attributes(const std::string& layer,
00098               int color, int color24, int width,
00099               const std::string& linetype,
00100               int handle=-1) :
00101     layer(layer),
00102     color(color),
00103     color24(color24),
00104     width(width),
00105     linetype(linetype),
00106     linetypeScale(1.0),
00107     handle(handle),
00108     inPaperSpace(false) {
00109 }
00110
00115 void setLayer(const std::string& layer) {
00116     this->layer = layer;
00117 }
00118
00122 std::string getLayer() const {
00123     return layer;
00124 }
00125
00131 void setColor(int color) {
00132     this->color = color;
00133 }
00134
00140 void setColor24(int color) {
00141     this->color24 = color;
00142 }
00143
00149 int getColor() const {
00150     return color;
00151 }
00152
00158 int getColor24() const {
00159     return color24;
00160 }
00161
00165 void setWidth(int width) {
00166     this->width = width;
00167 }
00168
00172 int getWidth() const {
00173     return width;
00174 }
00175
00180 void setLinetype(const std::string& linetype) {
00181     this->linetype = linetype;
00182 }
00183
00187 void setLinetypeScale(double linetypeScale) {
00188     this->linetypeScale = linetypeScale;
00189 }
00190
00191 double getLinetypeScale() const {
00192     return linetypeScale;
00193 }
00194
00198 std::string getLinetype() const {
00199     if (linetype.length()==0) {
00200         return "BYLAYER";
00201     } else {
00202         return linetype;
00203     }
00204 }
00205
00206 void setHandle(int h) {
00207     handle = h;
00208 }
00209
00210 int getHandle() const {
00211     return handle;
00212 }
00213
00214 void setInPaperSpace(bool on) {
00215     inPaperSpace = on;
00216 }
00217
00218 bool isInPaperSpace() const {
00219     return inPaperSpace;
00220 }
```

```

00221
00222 private:
00223     std::string layer;
00224     int color;
00225     int color24;
00226     int width;
00227     std::string linetype;
00228     double linetypeScale;
00229     int handle;
00230
00231     // DXF code 67 (true: entity in paper space, false: entity in model space (default):
00232     bool inPaperSpace;
00233 };
00234
00235 #endif
00236
00237 // EOF

```

6.2 dl_codes.h

```

00001 /*****
00002 ** Copyright (C) 2001-2013 RibbonSoft, GmbH. All rights reserved.
00003 ** Copyright (C) 2001 Robert J. Campbell Jr.
00004 **
00005 ** This file is part of the dxflib project.
00006 **
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00011 **
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00019 ** See http://www.ribbonsoft.com for further details.
00020 **
00021 ** Contact info@ribbonsoft.com if any conditions of this licensing are
00022 ** not clear to you.
00023 **
00024 *****/
00025
00030 #ifndef DXF_CODES_H
00031 #define DXF_CODES_H
00032
00033 #include "dl_global.h"
00034
00035 #if _MSC_VER > 1000
00036 #pragma once
00037 #endif // _MSC_VER > 1000
00038
00039 #if defined(__OS2__) || defined(__EMX__)
00040 #define strcasecmp(s,t) stricmp(s,t)
00041 #endif
00042
00043 #if defined(_WIN32)
00044 #define strcasecmp(s,t) _stricmp(s,t)
00045 #endif
00046
00047
00048 #ifndef _WIN32
00049 #undef M_PI
00050 #define M_PI 3.14159265358979323846
00051 #pragma warning(disable : 4800)
00052 #endif
00053
00054 #ifndef M_PI
00055 #define M_PI 3.1415926535897932384626433832795
00056 #endif
00057
00058 #define DL_DXF_MAXLINE 1024
00059 #define DL_DXF_MAXGROUPCODE 1100
00060
00061 // used to mark invalid vectors:
00062 // #define DL_DXF_MAXDOUBLE 1.0E+10
00063
00067 class DXFLIB_EXPORT DL_Codes {
00068 public:
00072     enum color {
00073         black = 250,

```

```

00074     green = 3,
00075     red = 1,
00076     brown = 15,
00077     yellow = 2,
00078     cyan = 4,
00079     magenta = 6,
00080     gray = 8,
00081     blue = 5,
00082     l_blue = 163,
00083     l_green = 121,
00084     l_cyan = 131,
00085     l_red = 23,
00086     l_magenta = 221,
00087     l_gray = 252,
00088     white = 7,
00089     bylayer = 256,
00090     byblock = 0
00091 };
00092
00096     enum version {
00097         AC1009_MIN,      // R12, minimalistic
00098         AC1009,         // R12
00099         AC1012,
00100         AC1014,
00101         AC1015         // R2000
00102     };
00103 };
00104
00105
00106 // Extended color palette:
00107 // The first entry is only for direct indexing starting with [1]
00108 // Color 1 is red (1,0,0)
00109 const double dxfColors[][3] = {
00110     {0,0,0},           // unused
00111     {1,0,0},           // 1
00112     {1,1,0},
00113     {0,1,0},
00114     {0,1,1},
00115     {0,0,1},
00116     {1,0,1},
00117     {1,1,1},         // black or white
00118     {0.5,0.5,0.5},
00119     {0.75,0.75,0.75},
00120     {1,0,0},         // 10
00121     {1,0.5,0.5},
00122     {0.65,0,0},
00123     {0.65,0.325,0.325},
00124     {0.5,0,0},
00125     {0.5,0.25,0.25},
00126     {0.3,0,0},
00127     {0.3,0.15,0.15},
00128     {0.15,0,0},
00129     {0.15,0.075,0.075},
00130     {1,0.25,0},     // 20
00131     {1,0.625,0.5},
00132     {0.65,0.1625,0},
00133     {0.65,0.4063,0.325},
00134     {0.5,0.125,0},
00135     {0.5,0.3125,0.25},
00136     {0.3,0.075,0},
00137     {0.3,0.1875,0.15},
00138     {0.15,0.0375,0},
00139     {0.15,0.0938,0.075},
00140     {1,0.5,0},     // 30
00141     {1,0.75,0.5},
00142     {0.65,0.325,0},
00143     {0.65,0.4875,0.325},
00144     {0.5,0.25,0},
00145     {0.5,0.375,0.25},
00146     {0.3,0.15,0},
00147     {0.3,0.225,0.15},
00148     {0.15,0.075,0},
00149     {0.15,0.1125,0.075},
00150     {1,0.75,0},     // 40
00151     {1,0.875,0.5},
00152     {0.65,0.4875,0},
00153     {0.65,0.5688,0.325},
00154     {0.5,0.375,0},
00155     {0.5,0.4375,0.25},
00156     {0.3,0.225,0},
00157     {0.3,0.2625,0.15},
00158     {0.15,0.1125,0},
00159     {0.15,0.1313,0.075},
00160     {1,1,0},     // 50
00161     {1,1,0.5},
00162     {0.65,0.65,0},
00163     {0.65,0.65,0.325},

```

```

00164      {0.5,0.5,0},
00165      {0.5,0.5,0.25},
00166      {0.3,0.3,0},
00167      {0.3,0.3,0.15},
00168      {0.15,0.15,0},
00169      {0.15,0.15,0.075},
00170      {0.75,1,0}, // 60
00171      {0.875,1,0.5},
00172      {0.4875,0.65,0},
00173      {0.5688,0.65,0.325},
00174      {0.375,0.5,0},
00175      {0.4375,0.5,0.25},
00176      {0.225,0.3,0},
00177      {0.2625,0.3,0.15},
00178      {0.1125,0.15,0},
00179      {0.1313,0.15,0.075},
00180      {0.5,1,0}, // 70
00181      {0.75,1,0.5},
00182      {0.325,0.65,0},
00183      {0.4875,0.65,0.325},
00184      {0.25,0.5,0},
00185      {0.375,0.5,0.25},
00186      {0.15,0.3,0},
00187      {0.225,0.3,0.15},
00188      {0.075,0.15,0},
00189      {0.1125,0.15,0.075},
00190      {0.25,1,0}, // 80
00191      {0.625,1,0.5},
00192      {0.1625,0.65,0},
00193      {0.4063,0.65,0.325},
00194      {0.125,0.5,0},
00195      {0.3125,0.5,0.25},
00196      {0.075,0.3,0},
00197      {0.1875,0.3,0.15},
00198      {0.0375,0.15,0},
00199      {0.0938,0.15,0.075},
00200      {0,1,0}, // 90
00201      {0.5,1,0.5},
00202      {0,0.65,0},
00203      {0.325,0.65,0.325},
00204      {0,0.5,0},
00205      {0.25,0.5,0.25},
00206      {0,0.3,0},
00207      {0.15,0.3,0.15},
00208      {0,0.15,0},
00209      {0.075,0.15,0.075},
00210      {0,1,0.25}, // 100
00211      {0.5,1,0.625},
00212      {0,0.65,0.1625},
00213      {0.325,0.65,0.4063},
00214      {0,0.5,0.125},
00215      {0.25,0.5,0.3125},
00216      {0,0.3,0.075},
00217      {0.15,0.3,0.1875},
00218      {0,0.15,0.0375},
00219      {0.075,0.15,0.0938},
00220      {0,1,0.5}, // 110
00221      {0.5,1,0.75},
00222      {0,0.65,0.325},
00223      {0.325,0.65,0.4875},
00224      {0,0.5,0.25},
00225      {0.25,0.5,0.375},
00226      {0,0.3,0.15},
00227      {0.15,0.3,0.225},
00228      {0,0.15,0.075},
00229      {0.075,0.15,0.1125},
00230      {0,1,0.75}, // 120
00231      {0.5,1,0.875},
00232      {0,0.65,0.4875},
00233      {0.325,0.65,0.5688},
00234      {0,0.5,0.375},
00235      {0.25,0.5,0.4375},
00236      {0,0.3,0.225},
00237      {0.15,0.3,0.2625},
00238      {0,0.15,0.1125},
00239      {0.075,0.15,0.1313},
00240      {0,1,1}, // 130
00241      {0.5,1,1},
00242      {0,0.65,0.65},
00243      {0.325,0.65,0.65},
00244      {0,0.5,0.5},
00245      {0.25,0.5,0.5},
00246      {0,0.3,0.3},
00247      {0.15,0.3,0.3},
00248      {0,0.15,0.15},
00249      {0.075,0.15,0.15},
00250      {0,0.75,1}, // 140

```

```
00251 {0.5,0.875,1},
00252 {0,0.4875,0.65},
00253 {0.325,0.5688,0.65},
00254 {0,0.375,0.5},
00255 {0.25,0.4375,0.5},
00256 {0,0.225,0.3},
00257 {0.15,0.2625,0.3},
00258 {0,0.1125,0.15},
00259 {0.075,0.1313,0.15},
00260 {0,0.5,1}, // 150
00261 {0.5,0.75,1},
00262 {0,0.325,0.65},
00263 {0.325,0.4875,0.65},
00264 {0,0.25,0.5},
00265 {0.25,0.375,0.5},
00266 {0,0.15,0.3},
00267 {0.15,0.225,0.3},
00268 {0,0.075,0.15},
00269 {0.075,0.1125,0.15},
00270 {0,0.25,1}, // 160
00271 {0.5,0.625,1},
00272 {0,0.1625,0.65},
00273 {0.325,0.4063,0.65},
00274 {0,0.125,0.5},
00275 {0.25,0.3125,0.5},
00276 {0,0.075,0.3},
00277 {0.15,0.1875,0.3},
00278 {0,0.0375,0.15},
00279 {0.075,0.0938,0.15},
00280 {0,0,1}, // 170
00281 {0.5,0.5,1},
00282 {0,0,0.65},
00283 {0.325,0.325,0.65},
00284 {0,0,0.5},
00285 {0.25,0.25,0.5},
00286 {0,0,0.3},
00287 {0.15,0.15,0.3},
00288 {0,0,0.15},
00289 {0.075,0.075,0.15},
00290 {0.25,0,1}, // 180
00291 {0.625,0.5,1},
00292 {0.1625,0,0.65},
00293 {0.4063,0.325,0.65},
00294 {0.125,0,0.5},
00295 {0.3125,0.25,0.5},
00296 {0.075,0,0.3},
00297 {0.1875,0.15,0.3},
00298 {0.0375,0,0.15},
00299 {0.0938,0.075,0.15},
00300 {0.5,0,1}, // 190
00301 {0.75,0.5,1},
00302 {0.325,0,0.65},
00303 {0.4875,0.325,0.65},
00304 {0.25,0,0.5},
00305 {0.375,0.25,0.5},
00306 {0.15,0,0.3},
00307 {0.225,0.15,0.3},
00308 {0.075,0,0.15},
00309 {0.1125,0.075,0.15},
00310 {0.75,0,1}, // 200
00311 {0.875,0.5,1},
00312 {0.4875,0,0.65},
00313 {0.5688,0.325,0.65},
00314 {0.375,0,0.5},
00315 {0.4375,0.25,0.5},
00316 {0.225,0,0.3},
00317 {0.2625,0.15,0.3},
00318 {0.1125,0,0.15},
00319 {0.1313,0.075,0.15},
00320 {1,0,1}, // 210
00321 {1,0.5,1},
00322 {0.65,0,0.65},
00323 {0.65,0.325,0.65},
00324 {0.5,0,0.5},
00325 {0.5,0.25,0.5},
00326 {0.3,0,0.3},
00327 {0.3,0.15,0.3},
00328 {0.15,0,0.15},
00329 {0.15,0.075,0.15},
00330 {1,0,0.75}, // 220
00331 {1,0.5,0.875},
00332 {0.65,0,0.4875},
00333 {0.65,0.325,0.5688},
00334 {0.5,0,0.375},
00335 {0.5,0.25,0.4375},
00336 {0.3,0,0.225},
00337 {0.3,0.15,0.2625},
```

```

00338             {0.15,0,0.1125},
00339             {0.15,0.075,0.1313},
00340             {1,0,0.5},           // 230
00341             {1,0.5,0.75},
00342             {0.65,0,0.325},
00343             {0.65,0.325,0.4875},
00344             {0.5,0,0.25},
00345             {0.5,0.25,0.375},
00346             {0.3,0,0.15},
00347             {0.3,0.15,0.225},
00348             {0.15,0,0.075},
00349             {0.15,0.075,0.1125},
00350             {1,0,0.25},         // 240
00351             {1,0.5,0.625},
00352             {0.65,0,0.1625},
00353             {0.65,0.325,0.4063},
00354             {0.5,0,0.125},
00355             {0.5,0.25,0.3125},
00356             {0.3,0,0.075},
00357             {0.3,0.15,0.1875},
00358             {0.15,0,0.0375},
00359             {0.15,0.075,0.0938},
00360             {0.33,0.33,0.33},   // 250
00361             {0.464,0.464,0.464},
00362             {0.598,0.598,0.598},
00363             {0.732,0.732,0.732},
00364             {0.866,0.866,0.866},
00365             {1,1,1}           // 255
00366         }
00367     ;
00368
00369
00370 // AutoCAD VERSION aliases
00371 #define DL_VERSION_R12    DL_Codes::AC1009
00372 #define DL_VERSION_LT2    DL_Codes::AC1009
00373 #define DL_VERSION_R13    DL_Codes::AC1012 // not supported yet
00374 #define DL_VERSION_LT95   DL_Codes::AC1012 // not supported yet
00375 #define DL_VERSION_R14    DL_Codes::AC1014 // not supported yet
00376 #define DL_VERSION_LT97   DL_Codes::AC1014 // not supported yet
00377 #define DL_VERSION_LT98   DL_Codes::AC1014 // not supported yet
00378 #define DL_VERSION_2000   DL_Codes::AC1015
00379 #define DL_VERSION_2002   DL_Codes::AC1015
00380
00381
00382 // DXF Group Codes:
00383
00384 // Strings
00385 #define DL_STRGRP_START    0
00386 #define DL_STRGRP_END      9
00387
00388 // Coordinates
00389 #define DL_CRDGRP_START    10
00390 #define DL_CRDGRP_END      19
00391
00392 // Real values
00393 #define DL_RLGRP_START     38
00394 #define DL_RLGRP_END       59
00395
00396 // Short integer values
00397 #define DL_SHOGRP_START    60
00398 #define DL_SHOGRP_END      79
00399
00400 // New in Release 13,
00401 #define DL_SUBCLASS        100
00402
00403 // More coordinates
00404 #define DL_CRD2GRP_START   210
00405 #define DL_CRD2GRP_END     239
00406
00407 // Extended data strings
00408 #define DL ESTRGRP_START  1000
00409 #define DL ESTRGRP_END    1009
00410
00411 // Extended data reals
00412 #define DL ERLGRP_START   1010
00413 #define DL ERLGRP_END    1059
00414
00415
00416 #define DL_Y8_COORD_CODE   28
00417 #define DL_Z0_COORD_CODE   30
00418 #define DL_Z8_COORD_CODE   38
00419
00420 #define DL_POINT_COORD_CODE 10
00421 #define DL_INSERT_COORD_CODE 10
00422
00423 #define DL_CRD2GRP_START   210
00424 #define DL_CRD2GRP_END     239

```

```

00425
00426 #define DL_THICKNESS          39
00427 #define DL_FIRST_REAL_CODE    THICKNESS
00428 #define DL_LAST_REAL_CODE      59
00429 #define DL_FIRST_INT_CODE      60
00430 #define DL_ATTFLAGS_CODE      70
00431 #define DL_PLINE_FLAGS_CODE    70
00432 #define DL_LAYER_FLAGS_CODE    70
00433 #define DL_FLD_LEN_CODE        73 // Inside ATTRIB resbuf
00434 #define DL_LAST_INT_CODE       79
00435 #define DL_X_EXTRU_CODE        210
00436 #define DL_Y_EXTRU_CODE        220
00437 #define DL_Z_EXTRU_CODE        230
00438 #define DL_COMMENT_CODE        999
00439
00440 // Start and endpoints of a line
00441 #define DL_LINE_START_CODE     10 // Followed by x coord
00442 #define DL_LINE_END_CODE      11 // Followed by x coord
00443
00444 // Some codes used by blocks
00445 #define DL_BLOCK_FLAGS_CODE    70 // An int containing flags
00446 #define DL_BLOCK_BASE_CODE     10 // Origin of block definition
00447 #define DL_XREF_DEPENDENT     16 // If a block contains an XREF
00448 #define DL_XREF_RESOLVED     32 // If a XREF resolved ok
00449 #define DL_REFERENCED         64 // If a block is ref'd in DWG
00450
00451 #define DL_XSCALE_CODE         41
00452 #define DL_YSCALE_CODE         42
00453 #define DL_ANGLE_CODE          50
00454 #define DL_INS_POINT_CODE     10 // Followed by x of ins pnt
00455 #define DL_NAME2_CODE         3 // Second appearance of name
00456
00457 // Some codes used by circle entities
00458 #define DL_CENTER_CODE         10 // Followed by x of center
00459 #define DL_RADIUS_CODE        40 // Followd by radius of circle
00460
00461 #define DL_COND_OP_CODE       -4 // Conditional op,ads_ssget
00462
00463 // When using ads_buildlist you MUST use RTDXF0 instead of these
00464 #define DL_ENTIITY_TYPE_CODE   0 // Then there is LINE, 3DFACE..
00465 #define DL_SES_CODE           0 // Start End String Code
00466 #define DL_FILE_SEP_CODE      0 // File separator
00467 #define DL_SOT_CODE           0 // Start Of Table
00468 #define DL_TEXTVAL_CODE       1
00469 #define DL_NAME_CODE          2
00470 #define DL_BLOCK_NAME_CODE    2
00471 #define DL_SECTION_NAME_CODE  2
00472 #define DL_ENT_HAND_CODE      5 // What follows is hexa string
00473 #define DL_TXT_STYLE_CODE     7 // Inside attributes
00474 #define DL_LAYER_NAME_CODE    8 // What follows is layer name
00475 #define DL_FIRST_XCOORD_CODE  10 // Group code x of 1st coord
00476 #define DL_FIRST_YCOORD_CODE  20 // Group code y of 1st coord
00477 #define DL_FIRST_ZCOORD_CODE  30 // Group code z of 1st coord
00478 #define DL_L_START_CODE       10
00479 #define DL_L_END_CODE         11
00480 #define DL_TXTHI_CODE         40
00481 #define DL_SCALE_X_CODE       41
00482 #define DL_SCALE_Y_CODE       42
00483 #define DL_SCALE_Z_CODE       43
00484 #define DL_BULGE_CODE         42 // Used in PLINE verts for arcs
00485 #define DL_ROTATION_CODE      50
00486 #define DL_COLOUR_CODE        62 // What follows is a color int
00487 #define DL_LTYPE_CODE         6 // What follows is a linetype
00488
00489
00490 // Attribute flags
00491 #define DL_ATT_FOLLOW_CODE     66
00492 #define DL_ATT_TAG_CODE       2
00493 #define DL_ATT_VAL_CODE       1
00494 #define DL_ATT_FLAGS_CODE     70 // 4 1 bit flags as follows...
00495 #define DL_ATT_INVIS_FLAG     1
00496 #define DL_ATT_CONST_FLAG     2
00497 #define DL_ATT_VERIFY_FLAG    4 // Prompt and verify
00498 #define DL_ATT_PRESET_FLAG    8 // No prompt and no verify
00499
00500 // PLINE defines
00501 // Flags
00502 #define DL_OPEN_PLINE         0x00
00503 #define DL_CLOSED_PLINE      0x01
00504 #define DL_POLYLINE3D        0x08
00505 #define DL_PFACE_MESH        0x40
00506 #define DL_PGON_MESH         0x10
00507 // Vertices follow entity, required in POLYLINES
00508 #define DL_VERTS_FOLLOW_CODE  66 // Value should always be 1
00509 #define DL_VERTEX_COORD_CODE  10
00510
00511

```

```

00512 // LAYER flags
00513 #define DL_FROZEN          1
00514 #define DL_FROZEN_BY_DEF  2
00515 #define DL_LOCKED         4
00516 #define DL_OBJECT_USED    64 // Object is ref'd in the dwg
00517
00518 #define DL_BLOCK_EN_CODE   -2 // Block entity definition
00519 #define DL_E_NAME         -1 // Entity name
00520
00521 // Extended data codes
00522 #define DL_EXTD_SENTINEL   (-3)
00523 #define DL_EXTD_STR        1000
00524 #define DL_EXTD_APP_NAME   1001
00525 #define DL_EXTD_CTL_STR    1002
00526 #define DL_EXTD_LYR_STR    1003
00527 #define DL_EXTD_CHUNK      1004
00528 #define DL_EXTD_HANDLE     1005
00529 #define DL_EXTD_POINT      1010
00530 #define DL_EXTD_POS        1011
00531 #define DL_EXTD_DISP       1012
00532 #define DL_EXTD_DIR        1013
00533 #define DL_EXTD_FLOAT      1040
00534 #define DL_EXTD_DIST       1041
00535 #define DL_EXTD_SCALE      1042
00536 #define DL_EXTD_INT16      1070
00537 #define DL_EXTD_INT32      1071
00538
00539 // UCS codes for use in ads_trans
00540 #define DL_WCS_TRANS_CODE   0
00541 #define DL_UCS_TRANS_CODE   1
00542 #define DL_DCS_TRANS_CODE   2
00543 #define DL_PCS_TRANS_CODE   3
00544
00545 #endif
00546

```

6.3 dl_creationadapter.h

```

00001 /*****
00002 ** Copyright (C) 2001-2013 RibbonSoft, GmbH. All rights reserved.
00003 **
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00019 **
00020 ** Contact info@ribbonsoft.com if any conditions of this licensing are
00021 ** not clear to you.
00022 **
00023 *****/
00024
00025 #ifndef DL_CREATIONADAPTER_H
00026 #define DL_CREATIONADAPTER_H
00027
00028 #include "dl_global.h"
00029
00030 #include "dl_creationinterface.h"
00031
00032 class DXFLIB_EXPORT DL_CreationAdapter : public DL_CreationInterface {
00033 public:
00034     DL_CreationAdapter() {}
00035     virtual ~DL_CreationAdapter() {}
00036     virtual void processCodeValuePair(unsigned int, const std::string&) {}
00037     virtual void endSection() {}
00038     virtual void addLayer(const DL_LayerData&) {}
00039     virtual void addLinetype(const DL_LinetypeData&) {}
00040     virtual void addLinetypeDash(double) {}
00041     virtual void addBlock(const DL_BlockData&) {}
00042     virtual void endBlock() {}
00043     virtual void addTextStyle(const DL_StyleData&) {}
00044     virtual void addPoint(const DL_PointData&) {}
00045     virtual void addLine(const DL_LineData&) {}

```

```

00053     virtual void addXLine(const DL_XLineData&) {}
00054     virtual void addRay(const DL_RayData&) {}
00055
00056     virtual void addArc(const DL_ArcData&) {}
00057     virtual void addCircle(const DL_CircleData&) {}
00058     virtual void addEllipse(const DL_EllipseData&) {}
00059
00060     virtual void addPolyline(const DL_PolylineData&) {}
00061     virtual void addVertex(const DL_VertexData&) {}
00062
00063     virtual void addSpline(const DL_SplineData&) {}
00064     virtual void addControlPoint(const DL_ControlPointData&) {}
00065     virtual void addFitPoint(const DL_FitPointData&) {}
00066     virtual void addKnot(const DL_KnotData&) {}
00067
00068     virtual void addInsert(const DL_InsertData&) {}
00069
00070     virtual void addMText(const DL_MTextData&) {}
00071     virtual void addMTextChunk(const std::string&) {}
00072     virtual void addText(const DL_TextData&) {}
00073     virtual void addArcAlignedText(const DL_ArcAlignedTextData&) {}
00074     virtual void addAttribute(const DL_AttributeData&) {}
00075
00076     virtual void addDimAlign(const DL_DimensionData&,
00077                             const DL_DimAlignedData&) {}
00078     virtual void addDimLinear(const DL_DimensionData&,
00079                              const DL_DimLinearData&) {}
00080     virtual void addDimRadial(const DL_DimensionData&,
00081                              const DL_DimRadialData&) {}
00082     virtual void addDimDiametric(const DL_DimensionData&,
00083                                  const DL_DimDiametricData&) {}
00084     virtual void addDimAngular(const DL_DimensionData&,
00085                               const DL_DimAngular2LData&) {}
00086     virtual void addDimAngular3P(const DL_DimensionData&,
00087                                  const DL_DimAngular3PData&) {}
00088     virtual void addDimOrdinate(const DL_DimensionData&,
00089                                const DL_DimOrdinateData&) {}
00090     virtual void addLeader(const DL_LeaderData&) {}
00091     virtual void addLeaderVertex(const DL_LeaderVertexData&) {}
00092
00093     virtual void addHatch(const DL_HatchData&) {}
00094
00095     virtual void addTrace(const DL_TraceData&) {}
00096     virtual void add3dFace(const DL_3dFaceData&) {}
00097     virtual void addSolid(const DL_SolidData&) {}
00098
00099     virtual void addImage(const DL_ImageData&) {}
00100     virtual void linkImage(const DL_ImageDefData&) {}
00101     virtual void addHatchLoop(const DL_HatchLoopData&) {}
00102     virtual void addHatchEdge(const DL_HatchEdgeData&) {}
00103
00104     virtual void addXRecord(const std::string&) {}
00105     virtual void addXRecordString(int, const std::string&) {}
00106     virtual void addXRecordReal(int, double) {}
00107     virtual void addXRecordInt(int, int) {}
00108     virtual void addXRecordBool(int, bool) {}
00109
00110     virtual void addXDataApp(const std::string&) {}
00111     virtual void addXDataString(int, const std::string&) {}
00112     virtual void addXDataReal(int, double) {}
00113     virtual void addXDataInt(int, int) {}
00114
00115     virtual void addDictionary(const DL_DictionaryData&) {}
00116     virtual void addDictionaryEntry(const DL_DictionaryEntryData&) {}
00117
00118     virtual void endEntity() {}
00119
00120     virtual void addComment(const std::string&) {}
00121
00122     virtual void setVariableVector(const std::string&, double, double, double, int) {}
00123     virtual void setVariableString(const std::string&, const std::string&, int) {}
00124     virtual void setVariableInt(const std::string&, int, int) {}
00125     virtual void setVariableDouble(const std::string&, double, int) {}
00126 #ifndef DL_COMPAT
00127     virtual void setVariableVector(const char*, double, double, double, int) {}
00128     virtual void setVariableString(const char*, const char*, int) {}
00129     virtual void setVariableInt(const char*, int, int) {}
00130     virtual void setVariableDouble(const char*, double, int) {}
00131     virtual void processCodeValuePair(unsigned int, char*) {}
00132     virtual void addComment(const char*) {}
00133     virtual void addMTextChunk(const char*) {}
00134 #endif
00135     virtual void endSequence() {}
00136 };
00137
00138 #endif

```

6.4 dl_creationinterface.h

```

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00018 ** See http://www.ribbonsoft.com for further details.
00019 **
00020 ** Contact info@ribbonsoft.com if any conditions of this licensing are
00021 ** not clear to you.
00022 **
00023 *****/
00024
00025 #ifndef DL_CREATIONINTERFACE_H
00026 #define DL_CREATIONINTERFACE_H
00027
00028 #include "dl_global.h"
00029
00030 #include <string.h>
00031
00032 #include "dl_attributes.h"
00033 #include "dl_codes.h"
00034 #include "dl_entities.h"
00035 #include "dl_extrusion.h"
00036
00047 class DXFLIB_EXPORT DL_CreationInterface {
00048 public:
00049     DL_CreationInterface() {
00050         extrusion = new DL_Extrusion;
00051     }
00052     virtual ~DL_CreationInterface() {
00053         delete extrusion;
00054     }
00055
00060     virtual void processCodeValuePair(unsigned int groupCode, const std::string& groupValue) = 0;
00061
00065     virtual void endSection() = 0;
00066
00070     virtual void addLayer(const DL_LayerData& data) = 0;
00071
00075     virtual void addLinetype(const DL_LinetypeData& data) = 0;
00076
00080     virtual void addLinetypeDash(double length) = 0;
00081
00088     virtual void addBlock(const DL_BlockData& data) = 0;
00089
00091     virtual void endBlock() = 0;
00092
00094     virtual void addTextStyle(const DL_StyleData& data) = 0;
00095
00097     virtual void addPoint(const DL_PointData& data) = 0;
00098
00100     virtual void addLine(const DL_LineData& data) = 0;
00101
00103     virtual void addXLine(const DL_XLineData& data) = 0;
00104
00106     virtual void addRay(const DL_RayData& data) = 0;
00107
00109     virtual void addArc(const DL_ArcData& data) = 0;
00110
00112     virtual void addCircle(const DL_CircleData& data) = 0;
00113
00115     virtual void addEllipse(const DL_EllipseData& data) = 0;
00116
00118     virtual void addPolyline(const DL_PolylineData& data) = 0;
00119
00121     virtual void addVertex(const DL_VertexData& data) = 0;
00122
00124     virtual void addSpline(const DL_SplineData& data) = 0;
00125
00127     virtual void addControlPoint(const DL_ControlPointData& data) = 0;
00128
00130     virtual void addFitPoint(const DL_FitPointData& data) = 0;
00131

```

```

00133     virtual void addKnot(const DL_KnotData& data) = 0;
00134
00136     virtual void addInsert(const DL_InsertData& data) = 0;
00137
00139     virtual void addTrace(const DL_TraceData& data) = 0;
00140
00142     virtual void add3dFace(const DL_3dFaceData& data) = 0;
00143
00145     virtual void addSolid(const DL_SolidData& data) = 0;
00146
00147
00149     virtual void addMText(const DL_MTextData& data) = 0;
00150
00156     virtual void addMTextChunk(const std::string& text) = 0;
00157
00159     virtual void addText(const DL_TextData& data) = 0;
00160
00162     virtual void addArcAlignedText(const DL_ArcAlignedTextData& data) = 0;
00163
00165     virtual void addAttribute(const DL_AttributeData& data) = 0;
00166
00170     virtual void addDimAlign(const DL_DimensionData& data,
00171                             const DL_DimAlignedData& edata) = 0;
00175     virtual void addDimLinear(const DL_DimensionData& data,
00176                              const DL_DimLinearData& edata) = 0;
00177
00181     virtual void addDimRadial(const DL_DimensionData& data,
00182                              const DL_DimRadialData& edata) = 0;
00183
00187     virtual void addDimDiametric(const DL_DimensionData& data,
00188                                  const DL_DimDiametricData& edata) = 0;
00189
00193     virtual void addDimAngular(const DL_DimensionData& data,
00194                                const DL_DimAngular2LData& edata) = 0;
00195
00199     virtual void addDimAngular3P(const DL_DimensionData& data,
00200                                  const DL_DimAngular3PData& edata) = 0;
00201
00205     virtual void addDimOrdinate(const DL_DimensionData& data,
00206                                 const DL_DimOrdinateData& edata) = 0;
00207
00211     virtual void addLeader(const DL_LeaderData& data) = 0;
00212
00216     virtual void addLeaderVertex(const DL_LeaderVertexData& data) = 0;
00217
00221     virtual void addHatch(const DL_HatchData& data) = 0;
00222
00226     virtual void addImage(const DL_ImageData& data) = 0;
00227
00231     virtual void linkImage(const DL_ImageDefData& data) = 0;
00232
00236     virtual void addHatchLoop(const DL_HatchLoopData& data) = 0;
00237
00241     virtual void addHatchEdge(const DL_HatchEdgeData& data) = 0;
00242
00246     virtual void addXRecord(const std::string& handle) = 0;
00247
00251     virtual void addXRecordString(int code, const std::string& value) = 0;
00252
00256     virtual void addXRecordReal(int code, double value) = 0;
00257
00261     virtual void addXRecordInt(int code, int value) = 0;
00262
00266     virtual void addXRecordBool(int code, bool value) = 0;
00267
00271     virtual void addXDataApp(const std::string& appId) = 0;
00272
00276     virtual void addXDataString(int code, const std::string& value) = 0;
00277
00281     virtual void addXDataReal(int code, double value) = 0;
00282
00286     virtual void addXDataInt(int code, int value) = 0;
00287
00291     virtual void addDictionary(const DL_DictionaryData& data) = 0;
00292
00296     virtual void addDictionaryEntry(const DL_DictionaryEntryData& data) = 0;
00297
00301     virtual void endEntity() = 0;
00302
00306     virtual void addComment(const std::string& comment) = 0;
00307
00311     virtual void setVariableVector(const std::string& key, double v1, double v2, double v3, int code)
= 0;
00312
00316     virtual void setVariableString(const std::string& key, const std::string& value, int code) = 0;
00317
00321     virtual void setVariableInt(const std::string& key, int value, int code) = 0;

```

```

00322
00326     virtual void setVariableDouble(const std::string& key, double value, int code) = 0;
00327
00328 #ifndef DL_COMPAT
00329     virtual void setVariableVector(const char* key, double v1, double v2, double v3, int code) = 0;
00330     virtual void setVariableString(const char* key, const char* value, int code) = 0;
00331     virtual void setVariableInt(const char* key, int value, int code) = 0;
00332     virtual void setVariableDouble(const char* key, double value, int code) = 0;
00333     virtual void processCodeValuePair(unsigned int groupCode, char* groupValue) = 0;
00334     virtual void addComment(const char* comment) = 0;
00335     virtual void addMTextChunk(const char* text) = 0;
00336 #endif
00337
00341     virtual void endSequence() = 0;
00342
00344     void setAttributes(const DL_Attributes& attrib) {
00345         attributes = attrib;
00346     }
00347
00349     DL_Attributes getAttributes() {
00350         return attributes;
00351     }
00352
00354     void setExtrusion(double dx, double dy, double dz, double elevation) {
00355         extrusion->setDirection(dx, dy, dz);
00356         extrusion->setElevation(elevation);
00357     }
00358
00360     DL_Extrusion* getExtrusion() {
00361         return extrusion;
00362     }
00363
00364 protected:
00365     DL_Attributes attributes;
00366     DL_Extrusion *extrusion;
00367 };
00368
00369 #endif

```

6.5 dl_dxf.h

```

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00020 ** Contact info@ribbonsoft.com if any conditions of this licensing are
00021 ** not clear to you.
00022 **
00023 *****/
00024
00025 #ifndef DL_DXF_H
00026 #define DL_DXF_H
00027
00028 #include "dl_global.h"
00029
00030 #include <limits>
00031 #include <stdio.h>
00032 #include <stdlib.h>
00033 #include <string>
00034 #include <sstream>
00035 #include <map>
00036
00037 #include "dl_attributes.h"
00038 #include "dl_codes.h"
00039 #include "dl_entities.h"
00040 #include "dl_writer_ascii.h"
00041
00042 #ifdef _WIN32

```

```

00043 #undef M_PI
00044 #define M_PI 3.14159265358979323846
00045 #pragma warning(disable : 4800)
00046 #endif
00047
00048 #ifndef M_PI
00049 #define M_PI 3.1415926535897932384626433832795
00050 #endif
00051
00052 #ifndef DL_NANDOUBLE
00053 #define DL_NANDOUBLE std::numeric_limits<double>::quiet_NaN()
00054 #endif
00055
00056 class DL_CreationInterface;
00057 class DL_WriterA;
00058
00059
00060 #define DL_VERSION "3.26.4.0"
00061
00062 #define DL_VERSION_MAJOR 3
00063 #define DL_VERSION_MINOR 26
00064 #define DL_VERSION_REV 4
00065 #define DL_VERSION_BUILD 0
00066
00067 #define DL_UNKNOWN 0
00068 #define DL_LAYER 10
00069 #define DL_BLOCK 11
00070 #define DL_ENDBLK 12
00071 #define DL_LINETYPE 13
00072 #define DL_STYLE 20
00073 #define DL_SETTING 50
00074 #define DL_ENTITY_POINT 100
00075 #define DL_ENTITY_LINE 101
00076 #define DL_ENTITY_POLYLINE 102
00077 #define DL_ENTITY_LWPOLYLINE 103
00078 #define DL_ENTITY_VERTEX 104
00079 #define DL_ENTITY_SPLINE 105
00080 #define DL_ENTITY_KNOT 106
00081 #define DL_ENTITY_CONTROLPOINT 107
00082 #define DL_ENTITY_ARC 108
00083 #define DL_ENTITY_CIRCLE 109
00084 #define DL_ENTITY_ELLIPSE 110
00085 #define DL_ENTITY_INSERT 111
00086 #define DL_ENTITY_TEXT 112
00087 #define DL_ENTITY_MTEXT 113
00088 #define DL_ENTITY_DIMENSION 114
00089 #define DL_ENTITY_LEADER 115
00090 #define DL_ENTITY_HATCH 116
00091 #define DL_ENTITY_ATTRIB 117
00092 #define DL_ENTITY_IMAGE 118
00093 #define DL_ENTITY_IMAGEDEF 119
00094 #define DL_ENTITY_TRACE 120
00095 #define DL_ENTITY_SOLID 121
00096 #define DL_ENTITY_3DFACE 122
00097 #define DL_ENTITY_XLINE 123
00098 #define DL_ENTITY_RAY 124
00099 #define DL_ENTITY_ARCALIGNEDTEXT 125
00100 #define DL_ENTITY_SEQEND 126
00101 #define DL_XRECORD 200
00102 #define DL_DICTIONARY 210
00103
00104
00122 class DXFLIB_EXPORT DL_Dxf {
00123 public:
00124     DL_Dxf();
00125     ~DL_Dxf();
00126
00127     bool in(const std::string& file,
00128            DL_CreationInterface* creationInterface);
00129     bool readDxfGroups(FILE* fp,
00130                       DL_CreationInterface* creationInterface);
00131     static bool getStrippedLine(std::string& s, unsigned int size,
00132                                FILE* stream, bool stripSpace = true);
00133
00134     bool readDxfGroups(std::istream& stream,
00135                       DL_CreationInterface* creationInterface);
00136     bool in(std::istream &stream,
00137            DL_CreationInterface* creationInterface);
00138     static bool getStrippedLine(std::string& s, unsigned int size,
00139                                std::istream& stream, bool stripSpace = true);
00140
00141     static bool stripWhiteSpace(char** s, bool stripSpaces = true);
00142
00143     bool processDXFGroup(DL_CreationInterface* creationInterface,
00144                        int groupCode, const std::string& groupValue);
00145     void addSetting(DL_CreationInterface* creationInterface);
00146     void addLayer(DL_CreationInterface* creationInterface);

```

```
00147 void addLinetype(DL_CreationInterface *creationInterface);
00148 void addBlock(DL_CreationInterface* creationInterface);
00149 void endBlock(DL_CreationInterface* creationInterface);
00150 void addTextStyle(DL_CreationInterface* creationInterface);
00151
00152 void addPoint(DL_CreationInterface* creationInterface);
00153 void addLine(DL_CreationInterface* creationInterface);
00154 void addXLine(DL_CreationInterface* creationInterface);
00155 void addRay(DL_CreationInterface* creationInterface);
00156
00157 void addPolyline(DL_CreationInterface* creationInterface);
00158 void addVertex(DL_CreationInterface* creationInterface);
00159
00160 void addSpline(DL_CreationInterface* creationInterface);
00161
00162 void addArc(DL_CreationInterface* creationInterface);
00163 void addCircle(DL_CreationInterface* creationInterface);
00164 void addEllipse(DL_CreationInterface* creationInterface);
00165 void addInsert(DL_CreationInterface* creationInterface);
00166
00167 void addTrace(DL_CreationInterface* creationInterface);
00168 void add3dFace(DL_CreationInterface* creationInterface);
00169 void addSolid(DL_CreationInterface* creationInterface);
00170
00171 void addMText(DL_CreationInterface* creationInterface);
00172 void addText(DL_CreationInterface* creationInterface);
00173 void addArcAlignedText(DL_CreationInterface* creationInterface);
00174
00175 void addAttribute(DL_CreationInterface* creationInterface);
00176
00177 DL_DimensionData getDimData();
00178 void addDimLinear(DL_CreationInterface* creationInterface);
00179 void addDimAligned(DL_CreationInterface* creationInterface);
00180 void addDimRadial(DL_CreationInterface* creationInterface);
00181 void addDimDiametric(DL_CreationInterface* creationInterface);
00182 void addDimAngular(DL_CreationInterface* creationInterface);
00183 void addDimAngular3P(DL_CreationInterface* creationInterface);
00184 void addDimOrdinate(DL_CreationInterface* creationInterface);
00185
00186 void addLeader(DL_CreationInterface* creationInterface);
00187
00188 void addHatch(DL_CreationInterface* creationInterface);
00189 void addHatchLoop();
00190 void addHatchEdge();
00191 bool handleHatchData(DL_CreationInterface* creationInterface);
00192
00193 void addImage(DL_CreationInterface* creationInterface);
00194 void addImageDef(DL_CreationInterface* creationInterface);
00195
00196 void addComment(DL_CreationInterface* creationInterface, const std::string& comment);
00197
00198 void addDictionary(DL_CreationInterface* creationInterface);
00199 void addDictionaryEntry(DL_CreationInterface* creationInterface);
00200
00201 bool handleXRecordData(DL_CreationInterface* creationInterface);
00202 bool handleDictionaryData(DL_CreationInterface* creationInterface);
00203
00204 bool handleXData(DL_CreationInterface *creationInterface);
00205 bool handleMTextData(DL_CreationInterface* creationInterface);
00206 bool handleWPolylineData(DL_CreationInterface* creationInterface);
00207 bool handleSplineData(DL_CreationInterface* creationInterface);
00208 bool handleLeaderData(DL_CreationInterface* creationInterface);
00209 bool handleLinetypeData(DL_CreationInterface* creationInterface);
00210
00211 void endEntity(DL_CreationInterface* creationInterface);
00212
00213 void endSequence(DL_CreationInterface* creationInterface);
00214
00215 //int stringToInt(const char* s, bool* ok=NULL);
00216
00217 DL_WriterA* out(const char* file,
00218               DL_Codes::version version=DL_VERSION_2000);
00219
00220 void writeHeader(DL_WriterA& dw);
00221
00222 void writePoint(DL_WriterA& dw,
00223               const DL_PointData& data,
00224               const DL_Attributes& attrib);
00225 void writeLine(DL_WriterA& dw,
00226               const DL_LineData& data,
00227               const DL_Attributes& attrib);
00228 void writeXLine(DL_WriterA& dw,
00229               const DL_XLineData& data,
00230               const DL_Attributes& attrib);
00231 void writeRay(DL_WriterA& dw,
00232               const DL_RayData& data,
00233               const DL_Attributes& attrib);
```

```
00234 void writePolyline(DL_WriterA& dw,  
00235                  const DL_PolylineData& data,  
00236                  const DL_Attributes& attrib);  
00237 void writeVertex(DL_WriterA& dw,  
00238                 const DL_VertexData& data);  
00239 void writePolylineEnd(DL_WriterA& dw);  
00240 void writeSpline(DL_WriterA& dw,  
00241                const DL_SplineData& data,  
00242                const DL_Attributes& attrib);  
00243 void writeControlPoint(DL_WriterA& dw,  
00244                      const DL_ControlPointData& data);  
00245 void writeFitPoint(DL_WriterA& dw,  
00246                  const DL_FitPointData& data);  
00247 void writeKnot(DL_WriterA& dw,  
00248              const DL_KnotData& data);  
00249 void writeCircle(DL_WriterA& dw,  
00250                const DL_CircleData& data,  
00251                const DL_Attributes& attrib);  
00252 void writeArc(DL_WriterA& dw,  
00253              const DL_ArcData& data,  
00254              const DL_Attributes& attrib);  
00255 void writeEllipse(DL_WriterA& dw,  
00256                 const DL_EllipseData& data,  
00257                 const DL_Attributes& attrib);  
00258 void writeSolid(DL_WriterA& dw,  
00259               const DL_SolidData& data,  
00260               const DL_Attributes& attrib);  
00261 void writeTrace(DL_WriterA& dw,  
00262               const DL_TraceData& data,  
00263               const DL_Attributes& attrib);  
00264 void write3dFace(DL_WriterA& dw,  
00265                const DL_3dFaceData& data,  
00266                const DL_Attributes& attrib);  
00267 void writeInsert(DL_WriterA& dw,  
00268                const DL_InsertData& data,  
00269                const DL_Attributes& attrib);  
00270 void writeMText(DL_WriterA& dw,  
00271               const DL_MTextData& data,  
00272               const DL_Attributes& attrib);  
00273 void writeText(DL_WriterA& dw,  
00274               const DL_TextData& data,  
00275               const DL_Attributes& attrib);  
00276 void writeAttribute(DL_WriterA& dw,  
00277                   const DL_AttributeData& data,  
00278                   const DL_Attributes& attrib);  
00279 void writeDimStyleOverrides(DL_WriterA& dw,  
00280                            const DL_DimensionData& data);  
00281 void writeDimAligned(DL_WriterA& dw,  
00282                    const DL_DimensionData& data,  
00283                    const DL_DimAlignedData& edata,  
00284                    const DL_Attributes& attrib);  
00285 void writeDimLinear(DL_WriterA& dw,  
00286                   const DL_DimensionData& data,  
00287                   const DL_DimLinearData& edata,  
00288                   const DL_Attributes& attrib);  
00289 void writeDimRadial(DL_WriterA& dw,  
00290                   const DL_DimensionData& data,  
00291                   const DL_DimRadialData& edata,  
00292                   const DL_Attributes& attrib);  
00293 void writeDimDiametric(DL_WriterA& dw,  
00294                      const DL_DimensionData& data,  
00295                      const DL_DimDiametricData& edata,  
00296                      const DL_Attributes& attrib);  
00297 void writeDimAngular2L(DL_WriterA& dw,  
00298                      const DL_DimensionData& data,  
00299                      const DL_DimAngular2LData& edata,  
00300                      const DL_Attributes& attrib);  
00301 void writeDimAngular3P(DL_WriterA& dw,  
00302                      const DL_DimensionData& data,  
00303                      const DL_DimAngular3PData& edata,  
00304                      const DL_Attributes& attrib);  
00305 void writeDimOrdinate(DL_WriterA& dw,  
00306                    const DL_DimensionData& data,  
00307                    const DL_DimOrdinateData& edata,  
00308                    const DL_Attributes& attrib);  
00309 void writeLeader(DL_WriterA& dw,  
00310                const DL_LeaderData& data,  
00311                const DL_Attributes& attrib);  
00312 void writeLeaderVertex(DL_WriterA& dw,  
00313                      const DL_LeaderVertexData& data);  
00314 void writeLeaderEnd(DL_WriterA& dw,  
00315                   const DL_LeaderData& data);  
00316 void writeHatch1(DL_WriterA& dw,  
00317                const DL_HatchData& data,  
00318                const DL_Attributes& attrib);  
00319 void writeHatch2(DL_WriterA& dw,  
00320                const DL_HatchData& data,
```

```

00321         const DL_Attributes& attrib);
00322 void writeHatchLoop1(DL_WriterA& dw,
00323                    const DL_HatchLoopData& data);
00324 void writeHatchLoop2(DL_WriterA& dw,
00325                    const DL_HatchLoopData& data);
00326 void writeHatchEdge(DL_WriterA& dw,
00327                   const DL_HatchEdgeData& data);
00328
00329 unsigned long writeImage(DL_WriterA& dw,
00330                       const DL_ImageData& data,
00331                       const DL_Attributes& attrib);
00332
00333 void writeImageDef(DL_WriterA& dw, int handle,
00334                 const DL_ImageData& data);
00335
00336 void writeLayer(DL_WriterA& dw,
00337               const DL_LayerData& data,
00338               const DL_Attributes& attrib);
00339
00340 void writeLinetype(DL_WriterA& dw,
00341                  const DL_LinetypeData& data);
00342
00343 void writeAppid(DL_WriterA& dw, const std::string& name);
00344
00345 void writeBlock(DL_WriterA& dw,
00346               const DL_BlockData& data);
00347 void writeEndBlock(DL_WriterA& dw, const std::string& name);
00348
00349 void writeVPort(DL_WriterA& dw);
00350 void writeStyle(DL_WriterA& dw, const DL_StyleData& style);
00351 void writeView(DL_WriterA& dw);
00352 void writeUcs(DL_WriterA& dw);
00353 void writeDimStyle(DL_WriterA& dw,
00354                  double dimasz, double dimexe, double dimexo,
00355                  double dimgap, double dimtxt);
00356 void writeBlockRecord(DL_WriterA& dw);
00357 void writeBlockRecord(DL_WriterA& dw, const std::string& name);
00358 void writeObjects(DL_WriterA& dw, const std::string& appDictionaryName = "");
00359 void writeAppDictionary(DL_WriterA& dw);
00360 unsigned long writeDictionaryEntry(DL_WriterA& dw, const std::string& name);
00361 void writeXRecord(DL_WriterA& dw, int handle, int value);
00362 void writeXRecord(DL_WriterA& dw, int handle, double value);
00363 void writeXRecord(DL_WriterA& dw, int handle, bool value);
00364 void writeXRecord(DL_WriterA& dw, int handle, const std::string& value);
00365 void writeObjectsEnd(DL_WriterA& dw);
00366
00367 void writeComment(DL_WriterA& dw, const std::string& comment);
00368
00373 //static double toReal(const char* value, double def=0.0);
00374
00379 // static int toInt(const char* value, int def=0) {
00380 //     if (value!=NULL && value[0] != '\0') {
00381 //         return atoi(value);
00382 //     }
00383 //     return def;
00385 // }
00386
00391 // static const char* toString(const char* value, const char* def="") {
00392 //     if (value!=NULL && value[0] != '\0') {
00393 //         return value;
00394 //     } else {
00395 //         return def;
00396 //     }
00397 // }
00398
00399 static bool checkVariable(const char* var, DL_Codes::version version);
00400
00401 DL_Codes::version getVersion() {
00402     return version;
00403 }
00404
00405 int getLibVersion(const std::string &str);
00406
00407 static void test();
00408
00409 bool hasValue(int code) {
00410     return values.count(code)==1;
00411 }
00412
00413 int getIntValue(int code, int def) {
00414     if (!hasValue(code)) {
00415         return def;
00416     }
00417     return toInt(values[code]);
00418 }
00419

```

```

00420     int toInt(const std::string& str) {
00421         char* p;
00422         return strtol(str.c_str(), &p, 10);
00423     }
00424
00425     int getInt16Value(int code, int def) {
00426         if (!hasValue(code)) {
00427             return def;
00428         }
00429         return toInt16(values[code]);
00430     }
00431
00432     int toInt16(const std::string& str) {
00433         char* p;
00434         return strtol(str.c_str(), &p, 16);
00435     }
00436
00437     bool toBool(const std::string& str) {
00438         char* p;
00439         return (bool)strtol(str.c_str(), &p, 10);
00440     }
00441
00442     std::string getStringValue(int code, const std::string& def) {
00443         if (!hasValue(code)) {
00444             return def;
00445         }
00446         return values[code];
00447     }
00448
00449     double getRealValue(int code, double def) {
00450         if (!hasValue(code)) {
00451             return def;
00452         }
00453         return toReal(values[code]);
00454     }
00455
00456     double toReal(const std::string& str) {
00457         double ret;
00458         // make sure the real value uses '.' not ','
00459         std::string str2 = str;
00460         std::replace(str2.begin(), str2.end(), ',', '.');
00461         // make sure c++ expects '.' not ',':
00462         std::istringstream istr(str2);
00463         //istr.imbue(std::locale("C"));
00464         istr >> ret;
00465         return ret;
00466     }
00467
00468 private:
00469     DL_Codes::version version;
00470
00471     std::string polylineLayer;
00472     double* vertices;
00473     int maxVertices;
00474     int vertexIndex;
00475
00476     double* knots;
00477     int maxKnots;
00478     int knotIndex;
00479
00480     double* weights;
00481     int weightIndex;
00482
00483     double* controlPoints;
00484     int maxControlPoints;
00485     int controlPointIndex;
00486
00487     double* fitPoints;
00488     int maxFitPoints;
00489     int fitPointIndex;
00490
00491     double* leaderVertices;
00492     int maxLeaderVertices;
00493     int leaderVertexIndex;
00494
00495     bool firstHatchLoop;
00496     DL_HatchEdgeData hatchEdge;
00497     std::vector<std::vector<DL_HatchEdgeData> > hatchEdges;
00498
00499     std::string xRecordHandle;
00500     bool xRecordValues;
00501
00502     // Only the useful part of the group code
00503     std::string groupCodeTmp;
00504     // ...same as integer
00505     unsigned int groupCode;
00506     // Only the useful part of the group value

```

```

00507     std::string groupValue;
00508     // Current entity type
00509     int currentObjectType;
00510     // Value of the current setting
00511     char settingValue[DL_DXF_MAXLINE+1];
00512     // Key of the current setting (e.g. "$ACADVER")
00513     std::string settingKey;
00514     // Stores the group codes
00515     std::map<int, std::string> values;
00516     // First call of this method. We initialize all group values in
00517     // the first call.
00518     bool firstCall;
00519     // Attributes of the current entity (layer, color, width, line type)
00520     DL_Attributes attrib;
00521     // library version. hex: 0x20003001 = 2.0.3.1
00522     int libVersion;
00523     // app specific dictionary handle:
00524     unsigned long appDictionaryHandle;
00525     // handle of standard text style, referenced by dimstyle:
00526     unsigned long styleHandleStd;
00527 };
00528
00529 #endif
00530
00531 // EOF

```

6.6 dl_entities.h

```

00001 /*****
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00018 ** See http://www.ribbonsoft.com for further details.
00019 **
00020 ** Contact info@ribbonsoft.com if any conditions of this licensing are
00021 ** not clear to you.
00022 **
00023 *****/
00024
00025 #ifndef DL_ENTITIES_H
00026 #define DL_ENTITIES_H
00027
00028 #include "dl_global.h"
00029
00030 #include <string>
00031 #include <vector>
00032
00033 struct DXFLIB_EXPORT DL_LayerData {
00034     DL_LayerData(const std::string& name,
00035                 int flags, bool off = false) :
00036         name(name), flags(flags), off(off) {
00037     }
00038     std::string name;
00039     int flags;
00040     bool off;
00041 };
00042
00043 struct DXFLIB_EXPORT DL_BlockData {
00044     DL_BlockData(const std::string& bName,
00045                 int bFlags,
00046                 double bbpx, double bbpy, double bbpz) {
00047         name = bName;
00048         flags = bFlags;
00049         bpx = bbpx;
00050         bpy = bbpy;
00051         bpz = bbpz;
00052     }
00053 };

```

```

00073
00075     std::string name;
00077     int flags;
00079     double bpx;
00081     double bpy;
00083     double bpz;
00084 };
00085
00086
00090 struct DXFLIB_EXPORT DL_LinetypeData {
00095     DL_LinetypeData(
00096         const std::string& name,
00097         const std::string& description,
00098         int flags,
00099         int numberOfDashes,
00100         double patternLength,
00101         double* pattern = NULL
00102     )
00103         : name(name),
00104         description(description),
00105         flags(flags),
00106         numberOfDashes(numberOfDashes),
00107         patternLength(patternLength),
00108         pattern(pattern)
00109     {}
00110
00112     std::string name;
00114     std::string description;
00116     int flags;
00118     int numberOfDashes;
00120     double patternLength;
00122     double* pattern;
00123 };
00124
00125
00126
00130 struct DXFLIB_EXPORT DL_StyleData {
00135     DL_StyleData(
00136         const std::string& name,
00137         int flags,
00138         double fixedTextHeight,
00139         double widthFactor,
00140         double obliqueAngle,
00141         int textGenerationFlags,
00142         double lastHeightUsed,
00143         const std::string& primaryFontFile,
00144         const std::string& bigFontFile
00145     )
00146         : name(name),
00147         flags(flags),
00148         fixedTextHeight(fixedTextHeight),
00149         widthFactor(widthFactor),
00150         obliqueAngle(obliqueAngle),
00151         textGenerationFlags(textGenerationFlags),
00152         lastHeightUsed(lastHeightUsed),
00153         primaryFontFile(primaryFontFile),
00154         bigFontFile(bigFontFile),
00155         bold(false),
00156         italic(false) {
00157     }
00158
00159     bool operator==(const DL_StyleData& other) {
00160         // ignore lastHeightUsed:
00161         return (name==other.name &&
00162             flags==other.flags &&
00163             fixedTextHeight==other.fixedTextHeight &&
00164             widthFactor==other.widthFactor &&
00165             obliqueAngle==other.obliqueAngle &&
00166             textGenerationFlags==other.textGenerationFlags &&
00167             primaryFontFile==other.primaryFontFile &&
00168             bigFontFile==other.bigFontFile);
00169     }
00170
00172     std::string name;
00174     int flags;
00176     double fixedTextHeight;
00178     double widthFactor;
00180     double obliqueAngle;
00182     int textGenerationFlags;
00184     double lastHeightUsed;
00186     std::string primaryFontFile;
00188     std::string bigFontFile;
00189
00190     bool bold;
00191     bool italic;
00192 };
00193

```

```
00197 struct DXFLIB_EXPORT DL_PointData {
00202     DL_PointData(double px=0.0, double py=0.0, double pz=0.0) {
00203         x = px;
00204         y = py;
00205         z = pz;
00206     }
00207
00209     double x;
00211     double y;
00213     double z;
00214 };
00215
00216
00217
00221 struct DXFLIB_EXPORT DL_LineData {
00226     DL_LineData(double lx1, double ly1, double lz1,
00227                 double lx2, double ly2, double lz2) {
00228         x1 = lx1;
00229         y1 = ly1;
00230         z1 = lz1;
00231
00232         x2 = lx2;
00233         y2 = ly2;
00234         z2 = lz2;
00235     }
00236
00238     double x1;
00240     double y1;
00242     double z1;
00243
00245     double x2;
00247     double y2;
00249     double z2;
00250 };
00251
00255 struct DXFLIB_EXPORT DL_XLineData {
00260     DL_XLineData(double bx, double by, double bz,
00261                 double dx, double dy, double dz) :
00262         bx(bx), by(by), bz(bz),
00263         dx(dx), dy(dy), dz(dz) {
00264     }
00265
00267     double bx;
00269     double by;
00271     double bz;
00272
00274     double dx;
00276     double dy;
00278     double dz;
00279 };
00280
00284 struct DXFLIB_EXPORT DL_RayData {
00289     DL_RayData(double bx, double by, double bz,
00290               double dx, double dy, double dz) :
00291         bx(bx), by(by), bz(bz),
00292         dx(dx), dy(dy), dz(dz) {
00293     }
00294
00296     double bx;
00298     double by;
00300     double bz;
00301
00303     double dx;
00305     double dy;
00307     double dz;
00308 };
00309
00310
00311
00315 struct DXFLIB_EXPORT DL_ArcData {
00320     DL_ArcData(double acx, double acy, double acz,
00321               double aRadius,
00322               double aAngle1, double aAngle2) {
00323
00324         cx = acx;
00325         cy = acy;
00326         cz = acz;
00327         radius = aRadius;
00328         angle1 = aAngle1;
00329         angle2 = aAngle2;
00330     }
00331
00333     double cx;
00335     double cy;
00337     double cz;
00338
00340     double radius;
```

```
00342     double angle1;
00344     double angle2;
00345 };
00346
00347
00348
00352 struct DXFLIB_EXPORT DL_CircleData {
00357     DL_CircleData(double acx, double acy, double acz,
00358                 double aRadius) {
00359
00360         cx = acx;
00361         cy = acy;
00362         cz = acz;
00363         radius = aRadius;
00364     }
00365
00367     double cx;
00369     double cy;
00371     double cz;
00372
00374     double radius;
00375 };
00376
00377
00378
00382 struct DXFLIB_EXPORT DL_PolylineData {
00387     DL_PolylineData(int pNumber, int pMVerteces, int pNVerteces, int pFlags, double pElevation = 0.0)
    {
00388         number = pNumber;
00389         m = pMVerteces;
00390         n = pNVerteces;
00391         elevation = pElevation;
00392         flags = pFlags;
00393     }
00394
00396     unsigned int number;
00397
00399     unsigned int m;
00400
00402     unsigned int n;
00403
00405     double elevation;
00406
00408     int flags;
00409 };
00410
00411
00412
00416 struct DXFLIB_EXPORT DL_VertexData {
00421     DL_VertexData(double px=0.0, double py=0.0, double pz=0.0,
00422                 double pBulge=0.0) {
00423         x = px;
00424         y = py;
00425         z = pz;
00426         bulge = pBulge;
00427     }
00428
00430     double x;
00432     double y;
00434     double z;
00437     double bulge;
00438 };
00439
00440
00444 struct DXFLIB_EXPORT DL_TraceData {
00445     DL_TraceData() {
00446         thickness = 0.0;
00447         for (int i=0; i<4; i++) {
00448             x[i] = 0.0;
00449             y[i] = 0.0;
00450             z[i] = 0.0;
00451         }
00452     }
00453
00458     DL_TraceData(double sx1, double sy1, double sz1,
00459                 double sx2, double sy2, double sz2,
00460                 double sx3, double sy3, double sz3,
00461                 double sx4, double sy4, double sz4,
00462                 double sthickness=0.0) {
00463
00464         thickness = sthickness;
00465
00466         x[0] = sx1;
00467         y[0] = sy1;
00468         z[0] = sz1;
00469
00470         x[1] = sx2;
```

```
00471     y[1] = sy2;
00472     z[1] = sz2;
00473
00474     x[2] = sx3;
00475     y[2] = sy3;
00476     z[2] = sz3;
00477
00478     x[3] = sx4;
00479     y[3] = sy4;
00480     z[3] = sz4;
00481 }
00482
00484 double thickness;
00485
00487 double x[4];
00488 double y[4];
00489 double z[4];
00490 };
00491
00492
00493
00494
00495
00499 typedef DL_TraceData DL_SolidData;
00500
00501
00505 typedef DL_TraceData DL_3dFaceData;
00506
00507
00511 struct DXFLIB_EXPORT DL_SplineData {
00512     DL_SplineData(int degree,
00513                 int nKnots,
00514                 int nControl,
00515                 int nFit,
00516                 int flags) :
00517         degree(degree),
00518         nKnots(nKnots),
00519         nControl(nControl),
00520         nFit(nFit),
00521         flags(flags) {
00522     }
00523
00524     unsigned int degree;
00525
00526     unsigned int nKnots;
00527
00528     unsigned int nControl;
00529
00530     unsigned int nFit;
00531
00532     int flags;
00533
00534     double tangentStartX;
00535     double tangentStartY;
00536     double tangentStartZ;
00537     double tangentEndX;
00538     double tangentEndY;
00539     double tangentEndZ;
00540 };
00541
00542
00543
00544
00545
00546
00547
00548
00549 };
00550
00551
00552
00556 struct DXFLIB_EXPORT DL_KnotData {
00557     DL_KnotData() {}
00558     DL_KnotData(double pk) {
00559         k = pk;
00560     }
00561
00562     double k;
00563 };
00564
00565
00566
00567
00568 };
00569
00570
00571
00575 struct DXFLIB_EXPORT DL_ControlPointData {
00576     DL_ControlPointData(double px, double py, double pz, double weight) {
00577         x = px;
00578         y = py;
00579         z = pz;
00580         w = weight;
00581     }
00582
00583     double x;
00584     double y;
00585     double z;
00586     double w;
00587 };
00588
00589
00590
00591
00592
00593
00594
00595 };
00596
```

```
00597
00598
00602 struct DXFLIB_EXPORT DL_FitPointData {
00607     DL_FitPointData(double x, double y, double z) : x(x), y(y), z(z) {}
00608
00610     double x;
00612     double y;
00614     double z;
00615 };
00616
00617
00618
00622 struct DXFLIB_EXPORT DL_EllipseData {
00627     DL_EllipseData(double cx, double cy, double cz,
00628                   double mx, double my, double mz,
00629                   double ratio,
00630                   double angle1, double angle2)
00631     : cx(cx),
00632       cy(cy),
00633       cz(cz),
00634       mx(mx),
00635       my(my),
00636       mz(mz),
00637       ratio(ratio),
00638       angle1(angle1),
00639       angle2(angle2) {
00640     }
00641
00643     double cx;
00645     double cy;
00647     double cz;
00648
00650     double mx;
00652     double my;
00654     double mz;
00655
00657     double ratio;
00659     double angle1;
00661     double angle2;
00662 };
00663
00664
00665
00669 struct DXFLIB_EXPORT DL_InsertData {
00674     DL_InsertData(const std::string& name,
00675                  double ipx, double ipy, double ipz,
00676                  double sx, double sy, double sz,
00677                  double angle,
00678                  int cols, int rows,
00679                  double colSp, double rowSp) :
00680     name(name),
00681     ipx(ipx), ipy(ipy), ipz(ipz),
00682     sx(sx), sy(sy), sz(sz),
00683     angle(angle),
00684     cols(cols), rows(rows),
00685     colSp(colSp), rowSp(rowSp) {
00686     }
00687
00689     std::string name;
00691     double ipx;
00693     double ipy;
00695     double ipz;
00697     double sx;
00699     double sy;
00701     double sz;
00703     double angle;
00705     int cols;
00707     int rows;
00709     double colSp;
00711     double rowSp;
00712 };
00713
00714
00715
00719 struct DXFLIB_EXPORT DL_MTextData {
00724     DL_MTextData(double ipx, double ipy, double ipz,
00725                 double dirx, double diry, double dirz,
00726                 double height, double width,
00727                 int attachmentPoint,
00728                 int drawingDirection,
00729                 int lineSpacingStyle,
00730                 double lineSpacingFactor,
00731                 const std::string& text,
00732                 const std::string& style,
00733                 double angle) :
00734     ipx(ipx), ipy(ipy), ipz(ipz),
00735     dirx(dirx), diry(diry), dirz(dirz),
```

```

00736     height(height), width(width),
00737     attachmentPoint(attachmentPoint),
00738     drawingDirection(drawingDirection),
00739     lineSpacingStyle(lineSpacingStyle),
00740     lineSpacingFactor(lineSpacingFactor),
00741     text(text),
00742     style(style),
00743     angle(angle) {
00744
00745 }
00746
00748 double ipx;
00750 double ipy;
00752 double ipz;
00754 double dirx;
00756 double diry;
00758 double dirz;
00760 double height;
00762 double width;
00770 int attachmentPoint;
00776 int drawingDirection;
00782 int lineSpacingStyle;
00786 double lineSpacingFactor;
00788 std::string text;
00790 std::string style;
00792 double angle;
00793 };
00794
00795
00796
00800 struct DXFLIB_EXPORT DL_TextData {
00805     DL_TextData(double ipx, double ipy, double ipz,
00806                double apx, double apy, double apz,
00807                double height, double xScaleFactor,
00808                int textGenerationFlags,
00809                int hJustification,
00810                int vJustification,
00811                const std::string& text,
00812                const std::string& style,
00813                double angle)
00814     : ipx(ipx), ipy(ipy), ipz(ipz),
00815       apx(apx), apy(apy), apz(apz),
00816       height(height), xScaleFactor(xScaleFactor),
00817       textGenerationFlags(textGenerationFlags),
00818       hJustification(hJustification),
00819       vJustification(vJustification),
00820       text(text),
00821       style(style),
00822       angle(angle) {
00823 }
00824
00826 double ipx;
00828 double ipy;
00830 double ipz;
00831
00833 double apx;
00835 double apy;
00837 double apz;
00838
00840 double height;
00842 double xScaleFactor;
00844 int textGenerationFlags;
00852 int hJustification;
00858 int vJustification;
00860 std::string text;
00862 std::string style;
00864 double angle;
00865 };
00866
00870 struct DXFLIB_EXPORT DL_ArcAlignedTextData {
00871
00873     std::string text;
00875     std::string font;
00877     std::string style;
00878
00880     double cx;
00882     double cy;
00884     double cz;
00886     double radius;
00887
00889     double xScaleFactor;
00891     double height;
00893     double spacing;
00895     double offset;
00897     double rightOffset;
00899     double leftOffset;
00901     double startAngle;

```

```

00903     double endAngle;
00908     bool reversedCharacterOrder;
00913     int direction;
00920     int alignment;
00925     int side;
00927     bool bold;
00929     bool italic;
00931     bool underline;
00933     int characterSet;
00935     int pitch;
00940     bool shxFont;
00942     bool wizard;
00944     int arcHandle;
00945 };
00946
00950 struct DXFLIB_EXPORT DL_AttributeData : public DL_TextData {
00951     DL_AttributeData(const DL_TextData& tData, const std::string& tag)
00952         : DL_TextData(tData), tag(tag) {
00953     }
00954 }
00955
00960     DL_AttributeData(double ipx, double ipy, double ipz,
00961                     double apx, double apy, double apz,
00962                     double height, double xScaleFactor,
00963                     int textGenerationFlags,
00964                     int hJustification,
00965                     int vJustification,
00966                     const std::string& tag,
00967                     const std::string& text,
00968                     const std::string& style,
00969                     double angle)
00970     : DL_TextData(ipx, ipy, ipz,
00971                 apx, apy, apz,
00972                 height, xScaleFactor,
00973                 textGenerationFlags,
00974                 hJustification,
00975                 vJustification,
00976                 text,
00977                 style,
00978                 angle),
00979     tag(tag) {
00980 }
00981
00983     std::string tag;
00984 };
00985
00986 struct DXFLIB_EXPORT DL_DimensionData {
00995     DL_DimensionData(double dpx, double dpy, double dpz,
00996                     double mpx, double mpy, double mpz,
00997                     int type,
00998                     int attachmentPoint,
00999                     int lineSpacingStyle,
01000                     double lineSpacingFactor,
01001                     const std::string& text,
01002                     const std::string& style,
01003                     double angle,
01004                     double linearFactor = 1.0,
01005                     double dimScale = 1.0) :
01006     dpx(dpx), dpy(dpy), dpz(dpz),
01007     mpx(mpx), mpy(mpy), mpz(mpz),
01008     type(type),
01009     attachmentPoint(attachmentPoint),
01010     lineSpacingStyle(lineSpacingStyle),
01011     lineSpacingFactor(lineSpacingFactor),
01012     text(text),
01013     style(style),
01014     angle(angle),
01015     linearFactor(linearFactor),
01016     dimScale(dimScale) {
01017 }
01018 }
01019
01021     double dpx;
01023     double dpy;
01025     double dpz;
01027     double mpx;
01029     double mpy;
01031     double mpz;
01051     int type;
01059     int attachmentPoint;
01065     int lineSpacingStyle;
01069     double lineSpacingFactor;
01077     std::string text;
01079     std::string style;
01084     double angle;
01088     double linearFactor;

```

```
01092     double dimScale;
01093     bool arrow1Flipped;
01094     bool arrow2Flipped;
01095 };
01096
01097
01098
01102 struct DXFLIB_EXPORT DL_DimAlignedData {
01107     DL_DimAlignedData(double depx1, double depy1, double depz1,
01108                     double depx2, double depy2, double depz2) {
01109
01110         epx1 = depx1;
01111         epy1 = depy1;
01112         epz1 = depz1;
01113
01114         epx2 = depx2;
01115         epy2 = depy2;
01116         epz2 = depz2;
01117     }
01118
01120     double epx1;
01122     double epy1;
01124     double epz1;
01125
01127     double epx2;
01129     double epy2;
01131     double epz2;
01132 };
01133
01134
01135
01139 struct DXFLIB_EXPORT DL_DimLinearData {
01144     DL_DimLinearData(double ddp1, double ddp2, double ddp3,
01145                     double ddp4, double ddp5, double ddp6,
01146                     double dAngle, double dOblique) {
01147
01148         dpx1 = ddp1;
01149         dpy1 = ddp2;
01150         dpz1 = ddp3;
01151
01152         dpx2 = ddp4;
01153         dpy2 = ddp5;
01154         dpz2 = ddp6;
01155
01156         angle = dAngle;
01157         oblique = dOblique;
01158     }
01159
01161     double dpx1;
01163     double dpy1;
01165     double dpz1;
01166
01168     double dpx2;
01170     double dpy2;
01172     double dpz2;
01173
01175     double angle;
01177     double oblique;
01178 };
01179
01180
01181
01185 struct DXFLIB_EXPORT DL_DimRadialData {
01190     DL_DimRadialData(double ddp1, double ddp2, double ddp3, double dleader) {
01191         dpx = ddp1;
01192         dpy = ddp2;
01193         dpz = ddp3;
01194
01195         leader = dleader;
01196     }
01197
01199     double dpx;
01201     double dpy;
01203     double dpz;
01204
01206     double leader;
01207 };
01208
01209
01210
01214 struct DXFLIB_EXPORT DL_DimDiametricData {
01219     DL_DimDiametricData(double ddp1, double ddp2, double ddp3, double dleader) {
01220         dpx = ddp1;
01221         dpy = ddp2;
01222         dpz = ddp3;
01223
01224         leader = dleader;
```

```
01225     }
01226
01228     double dpx;
01230     double dpy;
01232     double dpz;
01233
01235     double leader;
01236 };
01237
01238
01239
01243 struct DXFLIB_EXPORT DL_DimAngular2LData {
01244     DL_DimAngular2LData(double ddp1, double ddp2, double ddp3,
01245         double ddp4, double ddp5, double ddp6,
01246         double ddp7, double ddp8, double ddp9,
01247         double ddp10, double ddp11, double ddp12) {
01248
01249         dpx1 = ddp1;
01250         dpy1 = ddp2;
01251         dpz1 = ddp3;
01252
01253         dpx2 = ddp4;
01254         dpy2 = ddp5;
01255         dpz2 = ddp6;
01256
01257         dpx3 = ddp7;
01258         dpy3 = ddp8;
01259         dpz3 = ddp9;
01260
01261         dpx4 = ddp10;
01262         dpy4 = ddp11;
01263         dpz4 = ddp12;
01264     }
01265
01266     double dpx1;
01267     double dpy1;
01268     double dpz1;
01269
01270     double dpx2;
01271     double dpy2;
01272     double dpz2;
01273
01274     double dpx3;
01275     double dpy3;
01276     double dpz3;
01277
01278     double dpx4;
01279     double dpy4;
01280     double dpz4;
01281 };
01282
01283
01284
01285 struct DXFLIB_EXPORT DL_DimAngular3PData {
01286     DL_DimAngular3PData(double ddp1, double ddp2, double ddp3,
01287         double ddp4, double ddp5, double ddp6,
01288         double ddp7, double ddp8, double ddp9,
01289         double ddp10, double ddp11, double ddp12) {
01290
01291         dpx1 = ddp1;
01292         dpy1 = ddp2;
01293         dpz1 = ddp3;
01294
01295         dpx2 = ddp4;
01296         dpy2 = ddp5;
01297         dpz2 = ddp6;
01298
01299         dpx3 = ddp7;
01300         dpy3 = ddp8;
01301         dpz3 = ddp9;
01302
01303         dpx4 = ddp10;
01304         dpy4 = ddp11;
01305         dpz4 = ddp12;
01306     }
01307
01308     double dpx1;
01309     double dpy1;
01310     double dpz1;
01311
01312     double dpx2;
01313     double dpy2;
01314     double dpz2;
01315
01316     double dpx3;
01317     double dpy3;
01318     double dpz3;
01319
01320     double dpx4;
01321     double dpy4;
01322     double dpz4;
01323 };
01324
01325
01326
01327 struct DXFLIB_EXPORT DL_DimOrdinateData {
01328     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01329         double ddp4, double ddp5, double ddp6,
01330         double ddp7, double ddp8, double ddp9,
01331         double ddp10, double ddp11, double ddp12) {
01332
01333         dpx1 = ddp1;
01334         dpy1 = ddp2;
01335         dpz1 = ddp3;
01336
01337         dpx2 = ddp4;
01338         dpy2 = ddp5;
01339         dpz2 = ddp6;
01340
01341         dpx3 = ddp7;
01342         dpy3 = ddp8;
01343         dpz3 = ddp9;
01344
01345         dpx4 = ddp10;
01346         dpy4 = ddp11;
01347         dpz4 = ddp12;
01348     }
01349
01350     double dpx1;
01351     double dpy1;
01352     double dpz1;
01353
01354     double dpx2;
01355     double dpy2;
01356     double dpz2;
01357
01358     double dpx3;
01359     double dpy3;
01360     double dpz3;
01361
01362     double dpx4;
01363     double dpy4;
01364     double dpz4;
01365 };
01366
01367
01368
01369 struct DXFLIB_EXPORT DL_DimOrdinateData {
01370     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01371         double ddp4, double ddp5, double ddp6,
01372         double ddp7, double ddp8, double ddp9,
01373         double ddp10, double ddp11, double ddp12) {
01374
01375         dpx1 = ddp1;
01376         dpy1 = ddp2;
01377         dpz1 = ddp3;
01378
01379         dpx2 = ddp4;
01380         dpy2 = ddp5;
01381         dpz2 = ddp6;
01382
01383         dpx3 = ddp7;
01384         dpy3 = ddp8;
01385         dpz3 = ddp9;
01386
01387         dpx4 = ddp10;
01388         dpy4 = ddp11;
01389         dpz4 = ddp12;
01390     }
01391
01392     double dpx1;
01393     double dpy1;
01394     double dpz1;
01395
01396     double dpx2;
01397     double dpy2;
01398     double dpz2;
01399
01400     double dpx3;
01401     double dpy3;
01402     double dpz3;
01403
01404     double dpx4;
01405     double dpy4;
01406     double dpz4;
01407 };
01408
01409
01410
01411 struct DXFLIB_EXPORT DL_DimOrdinateData {
01412     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01413         double ddp4, double ddp5, double ddp6,
01414         double ddp7, double ddp8, double ddp9,
01415         double ddp10, double ddp11, double ddp12) {
01416
01417         dpx1 = ddp1;
01418         dpy1 = ddp2;
01419         dpz1 = ddp3;
01420
01421         dpx2 = ddp4;
01422         dpy2 = ddp5;
01423         dpz2 = ddp6;
01424
01425         dpx3 = ddp7;
01426         dpy3 = ddp8;
01427         dpz3 = ddp9;
01428
01429         dpx4 = ddp10;
01430         dpy4 = ddp11;
01431         dpz4 = ddp12;
01432     }
01433
01434     double dpx1;
01435     double dpy1;
01436     double dpz1;
01437
01438     double dpx2;
01439     double dpy2;
01440     double dpz2;
01441
01442     double dpx3;
01443     double dpy3;
01444     double dpz3;
01445
01446     double dpx4;
01447     double dpy4;
01448     double dpz4;
01449 };
01450
01451
01452
01453 struct DXFLIB_EXPORT DL_DimOrdinateData {
01454     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01455         double ddp4, double ddp5, double ddp6,
01456         double ddp7, double ddp8, double ddp9,
01457         double ddp10, double ddp11, double ddp12) {
01458
01459         dpx1 = ddp1;
01460         dpy1 = ddp2;
01461         dpz1 = ddp3;
01462
01463         dpx2 = ddp4;
01464         dpy2 = ddp5;
01465         dpz2 = ddp6;
01466
01467         dpx3 = ddp7;
01468         dpy3 = ddp8;
01469         dpz3 = ddp9;
01470
01471         dpx4 = ddp10;
01472         dpy4 = ddp11;
01473         dpz4 = ddp12;
01474     }
01475
01476     double dpx1;
01477     double dpy1;
01478     double dpz1;
01479
01480     double dpx2;
01481     double dpy2;
01482     double dpz2;
01483
01484     double dpx3;
01485     double dpy3;
01486     double dpz3;
01487
01488     double dpx4;
01489     double dpy4;
01490     double dpz4;
01491 };
01492
01493
01494
01495 struct DXFLIB_EXPORT DL_DimOrdinateData {
01496     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01497         double ddp4, double ddp5, double ddp6,
01498         double ddp7, double ddp8, double ddp9,
01499         double ddp10, double ddp11, double ddp12) {
01500
01501         dpx1 = ddp1;
01502         dpy1 = ddp2;
01503         dpz1 = ddp3;
01504
01505         dpx2 = ddp4;
01506         dpy2 = ddp5;
01507         dpz2 = ddp6;
01508
01509         dpx3 = ddp7;
01510         dpy3 = ddp8;
01511         dpz3 = ddp9;
01512
01513         dpx4 = ddp10;
01514         dpy4 = ddp11;
01515         dpz4 = ddp12;
01516     }
01517
01518     double dpx1;
01519     double dpy1;
01520     double dpz1;
01521
01522     double dpx2;
01523     double dpy2;
01524     double dpz2;
01525
01526     double dpx3;
01527     double dpy3;
01528     double dpz3;
01529
01530     double dpx4;
01531     double dpy4;
01532     double dpz4;
01533 };
01534
01535
01536
01537 struct DXFLIB_EXPORT DL_DimOrdinateData {
01538     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01539         double ddp4, double ddp5, double ddp6,
01540         double ddp7, double ddp8, double ddp9,
01541         double ddp10, double ddp11, double ddp12) {
01542
01543         dpx1 = ddp1;
01544         dpy1 = ddp2;
01545         dpz1 = ddp3;
01546
01547         dpx2 = ddp4;
01548         dpy2 = ddp5;
01549         dpz2 = ddp6;
01550
01551         dpx3 = ddp7;
01552         dpy3 = ddp8;
01553         dpz3 = ddp9;
01554
01555         dpx4 = ddp10;
01556         dpy4 = ddp11;
01557         dpz4 = ddp12;
01558     }
01559
01560     double dpx1;
01561     double dpy1;
01562     double dpz1;
01563
01564     double dpx2;
01565     double dpy2;
01566     double dpz2;
01567
01568     double dpx3;
01569     double dpy3;
01570     double dpz3;
01571
01572     double dpx4;
01573     double dpy4;
01574     double dpz4;
01575 };
01576
01577
01578
01579 struct DXFLIB_EXPORT DL_DimOrdinateData {
01580     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01581         double ddp4, double ddp5, double ddp6,
01582         double ddp7, double ddp8, double ddp9,
01583         double ddp10, double ddp11, double ddp12) {
01584
01585         dpx1 = ddp1;
01586         dpy1 = ddp2;
01587         dpz1 = ddp3;
01588
01589         dpx2 = ddp4;
01590         dpy2 = ddp5;
01591         dpz2 = ddp6;
01592
01593         dpx3 = ddp7;
01594         dpy3 = ddp8;
01595         dpz3 = ddp9;
01596
01597         dpx4 = ddp10;
01598         dpy4 = ddp11;
01599         dpz4 = ddp12;
01600     }
01601
01602     double dpx1;
01603     double dpy1;
01604     double dpz1;
01605
01606     double dpx2;
01607     double dpy2;
01608     double dpz2;
01609
01610     double dpx3;
01611     double dpy3;
01612     double dpz3;
01613
01614     double dpx4;
01615     double dpy4;
01616     double dpz4;
01617 };
01618
01619
01620
01621 struct DXFLIB_EXPORT DL_DimOrdinateData {
01622     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01623         double ddp4, double ddp5, double ddp6,
01624         double ddp7, double ddp8, double ddp9,
01625         double ddp10, double ddp11, double ddp12) {
01626
01627         dpx1 = ddp1;
01628         dpy1 = ddp2;
01629         dpz1 = ddp3;
01630
01631         dpx2 = ddp4;
01632         dpy2 = ddp5;
01633         dpz2 = ddp6;
01634
01635         dpx3 = ddp7;
01636         dpy3 = ddp8;
01637         dpz3 = ddp9;
01638
01639         dpx4 = ddp10;
01640         dpy4 = ddp11;
01641         dpz4 = ddp12;
01642     }
01643
01644     double dpx1;
01645     double dpy1;
01646     double dpz1;
01647
01648     double dpx2;
01649     double dpy2;
01650     double dpz2;
01651
01652     double dpx3;
01653     double dpy3;
01654     double dpz3;
01655
01656     double dpx4;
01657     double dpy4;
01658     double dpz4;
01659 };
01660
01661
01662
01663 struct DXFLIB_EXPORT DL_DimOrdinateData {
01664     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01665         double ddp4, double ddp5, double ddp6,
01666         double ddp7, double ddp8, double ddp9,
01667         double ddp10, double ddp11, double ddp12) {
01668
01669         dpx1 = ddp1;
01670         dpy1 = ddp2;
01671         dpz1 = ddp3;
01672
01673         dpx2 = ddp4;
01674         dpy2 = ddp5;
01675         dpz2 = ddp6;
01676
01677         dpx3 = ddp7;
01678         dpy3 = ddp8;
01679         dpz3 = ddp9;
01680
01681         dpx4 = ddp10;
01682         dpy4 = ddp11;
01683         dpz4 = ddp12;
01684     }
01685
01686     double dpx1;
01687     double dpy1;
01688     double dpz1;
01689
01690     double dpx2;
01691     double dpy2;
01692     double dpz2;
01693
01694     double dpx3;
01695     double dpy3;
01696     double dpz3;
01697
01698     double dpx4;
01699     double dpy4;
01700     double dpz4;
01701 };
01702
01703
01704
01705 struct DXFLIB_EXPORT DL_DimOrdinateData {
01706     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01707         double ddp4, double ddp5, double ddp6,
01708         double ddp7, double ddp8, double ddp9,
01709         double ddp10, double ddp11, double ddp12) {
01710
01711         dpx1 = ddp1;
01712         dpy1 = ddp2;
01713         dpz1 = ddp3;
01714
01715         dpx2 = ddp4;
01716         dpy2 = ddp5;
01717         dpz2 = ddp6;
01718
01719         dpx3 = ddp7;
01720         dpy3 = ddp8;
01721         dpz3 = ddp9;
01722
01723         dpx4 = ddp10;
01724         dpy4 = ddp11;
01725         dpz4 = ddp12;
01726     }
01727
01728     double dpx1;
01729     double dpy1;
01730     double dpz1;
01731
01732     double dpx2;
01733     double dpy2;
01734     double dpz2;
01735
01736     double dpx3;
01737     double dpy3;
01738     double dpz3;
01739
01740     double dpx4;
01741     double dpy4;
01742     double dpz4;
01743 };
01744
01745
01746
01747 struct DXFLIB_EXPORT DL_DimOrdinateData {
01748     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01749         double ddp4, double ddp5, double ddp6,
01750         double ddp7, double ddp8, double ddp9,
01751         double ddp10, double ddp11, double ddp12) {
01752
01753         dpx1 = ddp1;
01754         dpy1 = ddp2;
01755         dpz1 = ddp3;
01756
01757         dpx2 = ddp4;
01758         dpy2 = ddp5;
01759         dpz2 = ddp6;
01760
01761         dpx3 = ddp7;
01762         dpy3 = ddp8;
01763         dpz3 = ddp9;
01764
01765         dpx4 = ddp10;
01766         dpy4 = ddp11;
01767         dpz4 = ddp12;
01768     }
01769
01770     double dpx1;
01771     double dpy1;
01772     double dpz1;
01773
01774     double dpx2;
01775     double dpy2;
01776     double dpz2;
01777
01778     double dpx3;
01779     double dpy3;
01780     double dpz3;
01781
01782     double dpx4;
01783     double dpy4;
01784     double dpz4;
01785 };
01786
01787
01788
01789 struct DXFLIB_EXPORT DL_DimOrdinateData {
01790     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01791         double ddp4, double ddp5, double ddp6,
01792         double ddp7, double ddp8, double ddp9,
01793         double ddp10, double ddp11, double ddp12) {
01794
01795         dpx1 = ddp1;
01796         dpy1 = ddp2;
01797         dpz1 = ddp3;
01798
01799         dpx2 = ddp4;
01800         dpy2 = ddp5;
01801         dpz2 = ddp6;
01802
01803         dpx3 = ddp7;
01804         dpy3 = ddp8;
01805         dpz3 = ddp9;
01806
01807         dpx4 = ddp10;
01808         dpy4 = ddp11;
01809         dpz4 = ddp12;
01810     }
01811
01812     double dpx1;
01813     double dpy1;
01814     double dpz1;
01815
01816     double dpx2;
01817     double dpy2;
01818     double dpz2;
01819
01820     double dpx3;
01821     double dpy3;
01822     double dpz3;
01823
01824     double dpx4;
01825     double dpy4;
01826     double dpz4;
01827 };
01828
01829
01830
01831 struct DXFLIB_EXPORT DL_DimOrdinateData {
01832     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01833         double ddp4, double ddp5, double ddp6,
01834         double ddp7, double ddp8, double ddp9,
01835         double ddp10, double ddp11, double ddp12) {
01836
01837         dpx1 = ddp1;
01838         dpy1 = ddp2;
01839         dpz1 = ddp3;
01840
01841         dpx2 = ddp4;
01842         dpy2 = ddp5;
01843         dpz2 = ddp6;
01844
01845         dpx3 = ddp7;
01846         dpy3 = ddp8;
01847         dpz3 = ddp9;
01848
01849         dpx4 = ddp10;
01850         dpy4 = ddp11;
01851         dpz4 = ddp12;
01852     }
01853
01854     double dpx1;
01855     double dpy1;
01856     double dpz1;
01857
01858     double dpx2;
01859     double dpy2;
01860     double dpz2;
01861
01862     double dpx3;
01863     double dpy3;
01864     double dpz3;
01865
01866     double dpx4;
01867     double dpy4;
01868     double dpz4;
01869 };
01870
01871
01872
01873 struct DXFLIB_EXPORT DL_DimOrdinateData {
01874     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01875         double ddp4, double ddp5, double ddp6,
01876         double ddp7, double ddp8, double ddp9,
01877         double ddp10, double ddp11, double ddp12) {
01878
01879         dpx1 = ddp1;
01880         dpy1 = ddp2;
01881         dpz1 = ddp3;
01882
01883         dpx2 = ddp4;
01884         dpy2 = ddp5;
01885         dpz2 = ddp6;
01886
01887         dpx3 = ddp7;
01888         dpy3 = ddp8;
01889         dpz3 = ddp9;
01890
01891         dpx4 = ddp10;
01892         dpy4 = ddp11;
01893         dpz4 = ddp12;
01894     }
01895
01896     double dpx1;
01897     double dpy1;
01898     double dpz1;
01899
01900     double dpx2;
01901     double dpy2;
01902     double dpz2;
01903
01904     double dpx3;
01905     double dpy3;
01906     double dpz3;
01907
01908     double dpx4;
01909     double dpy4;
01910     double dpz4;
01911 };
01912
01913
01914
01915 struct DXFLIB_EXPORT DL_DimOrdinateData {
01916     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01917         double ddp4, double ddp5, double ddp6,
01918         double ddp7, double ddp8, double ddp9,
01919         double ddp10, double ddp11, double ddp12) {
01920
01921         dpx1 = ddp1;
01922         dpy1 = ddp2;
01923         dpz1 = ddp3;
01924
01925         dpx2 = ddp4;
01926         dpy2 = ddp5;
01927         dpz2 = ddp6;
01928
01929         dpx3 = ddp7;
01930         dpy3 = ddp8;
01931         dpz3 = ddp9;
01932
01933         dpx4 = ddp10;
01934         dpy4 = ddp11;
01935         dpz4 = ddp12;
01936     }
01937
01938     double dpx1;
01939     double dpy1;
01940     double dpz1;
01941
01942     double dpx2;
01943     double dpy2;
01944     double dpz2;
01945
01946     double dpx3;
01947     double dpy3;
01948     double dpz3;
01949
01950     double dpx4;
01951     double dpy4;
01952     double dpz4;
01953 };
01954
01955
01956
01957 struct DXFLIB_EXPORT DL_DimOrdinateData {
01958     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
01959         double ddp4, double ddp5, double ddp6,
01960         double ddp7, double ddp8, double ddp9,
01961         double ddp10, double ddp11, double ddp12) {
01962
01963         dpx1 = ddp1;
01964         dpy1 = ddp2;
01965         dpz1 = ddp3;
01966
01967         dpx2 = ddp4;
01968         dpy2 = ddp5;
01969         dpz2 = ddp6;
01970
01971         dpx3 = ddp7;
01972         dpy3 = ddp8;
01973         dpz3 = ddp9;
01974
01975         dpx4 = ddp10;
01976         dpy4 = ddp11;
01977         dpz4 = ddp12;
01978     }
01979
01980     double dpx1;
01981     double dpy1;
01982     double dpz1;
01983
01984     double dpx2;
01985     double dpy2;
01986     double dpz2;
01987
01988     double dpx3;
01989     double dpy3;
01990     double dpz3;
01991
01992     double dpx4;
01993     double dpy4;
01994     double dpz4;
01995 };
01996
01997
01998
01999 struct DXFLIB_EXPORT DL_DimOrdinateData {
02000     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
02001         double ddp4, double ddp5, double ddp6,
02002         double ddp7, double ddp8, double ddp9,
02003         double ddp10, double ddp11, double ddp12) {
02004
02005         dpx1 = ddp1;
02006         dpy1 = ddp2;
02007         dpz1 = ddp3;
02008
02009         dpx2 = ddp4;
02010         dpy2 = ddp5;
02011         dpz2 = ddp6;
02012
02013         dpx3 = ddp7;
02014         dpy3 = ddp8;
02015         dpz3 = ddp9;
02016
02017         dpx4 = ddp10;
02018         dpy4 = ddp11;
02019         dpz4 = ddp12;
02020     }
02021
02022     double dpx1;
02023     double dpy1;
02024     double dpz1;
02025
02026     double dpx2;
02027     double dpy2;
02028     double dpz2;
02029
02030     double dpx3;
02031     double dpy3;
02032     double dpz3;
02033
02034     double dpx4;
02035     double dpy4;
02036     double dpz4;
02037 };
02038
02039
02040
02041 struct DXFLIB_EXPORT DL_DimOrdinateData {
02042     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
02043         double ddp4, double ddp5, double ddp6,
02044         double ddp7, double ddp8, double ddp9,
02045         double ddp10, double ddp11, double ddp12) {
02046
02047         dpx1 = ddp1;
02048         dpy1 = ddp2;
02049         dpz1 = ddp3;
02050
02051         dpx2 = ddp4;
02052         dpy2 = ddp5;
02053         dpz2 = ddp6;
02054
02055         dpx3 = ddp7;
02056         dpy3 = ddp8;
02057         dpz3 = ddp9;
02058
02059         dpx4 = ddp10;
02060         dpy4 = ddp11;
02061         dpz4 = ddp12;
02062     }
02063
02064     double dpx1;
02065     double dpy1;
02066     double dpz1;
02067
02068     double dpx2;
02069     double dpy2;
02070     double dpz2;
02071
02072     double dpx3;
02073     double dpy3;
02074     double dpz3;
02075
02076     double dpx4;
02077     double dpy4;
02078     double dpz4;
02079 };
02080
02081
02082
02083 struct DXFLIB_EXPORT DL_DimOrdinateData {
02084     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
02085         double ddp4, double ddp5, double ddp6,
02086         double ddp7, double ddp8, double ddp9,
02087         double ddp10, double ddp11, double ddp12) {
02088
02089         dpx1 = ddp1;
02090         dpy1 = ddp2;
02091         dpz1 = ddp3;
02092
02093         dpx2 = ddp4;
02094         dpy2 = ddp5;
02095         dpz2 = ddp6;
02096
02097         dpx3 = ddp7;
02098         dpy3 = ddp8;
02099         dpz3 = ddp9;
02100
02101         dpx4 = ddp10;
02102         dpy4 = ddp11;
02103         dpz4 = ddp12;
02104     }
02105
02106     double dpx1;
02107     double dpy1;
02108     double dpz1;
02109
02110     double dpx2;
02111     double dpy2;
02112     double dpz2;
02113
02114     double dpx3;
02115     double dpy3;
02116     double dpz3;
02117
02118     double dpx4;
02119     double dpy4;
02120     double dpz4;
02121 };
02122
02123
02124
02125 struct DXFLIB_EXPORT DL_DimOrdinateData {
02126     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
02127         double ddp4, double ddp5, double ddp6,
02128         double ddp7, double ddp8, double ddp9,
02129         double ddp10, double ddp11, double ddp12) {
02130
02131         dpx1 = ddp1;
02132         dpy1 = ddp2;
02133         dpz1 = ddp3;
02134
02135         dpx2 = ddp4;
02136         dpy2 = ddp5;
02137         dpz2 = ddp6;
02138
02139         dpx3 = ddp7;
02140         dpy3 = ddp8;
02141         dpz3 = ddp9;
02142
02143         dpx4 = ddp10;
02144         dpy4 = ddp11;
02145         dpz4 = ddp12;
02146     }
02147
02148     double dpx1;
02149     double dpy1;
02150     double dpz1;
02151
02152     double dpx2;
02153     double dpy2;
02154     double dpz2;
02155
02156     double dpx3;
02157     double dpy3;
02158     double dpz3;
02159
02160     double dpx4;
02161     double dpy4;
02162     double dpz4;
02163 };
02164
02165
02166
02167 struct DXFLIB_EXPORT DL_DimOrdinateData {
02168     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
02169         double ddp4, double ddp5, double ddp6,
02170         double ddp7, double ddp8, double ddp9,
02171         double ddp10, double ddp11, double ddp12) {
02172
02173         dpx1 = ddp1;
02174         dpy1 = ddp2;
02175         dpz1 = ddp3;
02176
02177         dpx2 = ddp4;
02178         dpy2 = ddp5;
02179         dpz2 = ddp6;
02180
02181         dpx3 = ddp7;
02182         dpy3 = ddp8;
02183         dpz3 = ddp9;
02184
02185         dpx4 = ddp10;
02186         dpy4 = ddp11;
02187         dpz4 = ddp12;
02188     }
02189
02190     double dpx1;
02191     double dpy1;
02192     double dpz1;
02193
02194     double dpx2;
02195     double dpy2;
02196     double dpz2;
02197
02198     double dpx3;
02199     double dpy3;
02200     double dpz3;
02201
02202     double dpx4;
02203     double dpy4;
02204     double dpz4;
02205 };
02206
02207
02208
02209 struct DXFLIB_EXPORT DL_DimOrdinateData {
02210     DL_DimOrdinateData(double ddp1, double ddp2, double ddp3,
02211         double ddp4, double ddp5, double ddp6,
02212         double ddp7, double ddp8, double ddp9,
02213         double ddp10, double ddp11, double ddp12) {
02214
02215         dpx1 = ddp1;
02216         dpy1
```

```
01358         double ddpz2, double ddpz2, double ddpz2,
01359         bool dxtype) {
01360
01361     dpx1 = ddpz1;
01362     dpy1 = ddpz1;
01363     dpz1 = ddpz1;
01364
01365     dpx2 = ddpz2;
01366     dpy2 = ddpz2;
01367     dpz2 = ddpz2;
01368
01369     xtype = dxtype;
01370 }
01371
01372 double dpx1;
01373 double dpy1;
01374 double dpz1;
01375
01376 double dpx2;
01377 double dpy2;
01378 double dpz2;
01379
01380 bool xtype;
01381 };
01382
01383 struct DXFLIB_EXPORT DL_LeaderData {
01384     DL_LeaderData(int arrowHeadFlag,
01385                 int leaderPathType,
01386                 int leaderCreationFlag,
01387                 int hooklineDirectionFlag,
01388                 int hooklineFlag,
01389                 double textAnnotationHeight,
01390                 double textAnnotationWidth,
01391                 int number,
01392                 double dimScale = 1.0) :
01393         arrowHeadFlag(arrowHeadFlag),
01394         leaderPathType(leaderPathType),
01395         leaderCreationFlag(leaderCreationFlag),
01396         hooklineDirectionFlag(hooklineDirectionFlag),
01397         hooklineFlag(hooklineFlag),
01398         textAnnotationHeight(textAnnotationHeight),
01399         textAnnotationWidth(textAnnotationWidth),
01400         number(number),
01401         dimScale(dimScale) {
01402     }
01403
01404     int arrowHeadFlag;
01405     int leaderPathType;
01406     int leaderCreationFlag;
01407     int hooklineDirectionFlag;
01408     int hooklineFlag;
01409     double textAnnotationHeight;
01410     double textAnnotationWidth;
01411     int number;
01412     double dimScale;
01413 };
01414
01415 struct DXFLIB_EXPORT DL_LeaderVertexData {
01416     DL_LeaderVertexData(double px=0.0, double py=0.0, double pz=0.0) {
01417         x = px;
01418         y = py;
01419         z = pz;
01420     }
01421
01422     double x;
01423     double y;
01424     double z;
01425 };
01426
01427 struct DXFLIB_EXPORT DL_HatchData {
01428     DL_HatchData() {}
01429
01430     DL_HatchData(int numLoops,
01431                 bool solid,
01432                 double scale,
01433                 double angle,
01434                 const std::string& pattern,
01435                 double originX = 0.0,
01436                 double originY = 0.0) :
01437         numLoops(numLoops),
```

```

01488     solid(solid),
01489     scale(scale),
01490     angle(angle),
01491     pattern(pattern),
01492     originX(originX),
01493     originY(originY) {
01494
01495     }
01496
01498     int numLoops;
01500     bool solid;
01502     double scale;
01504     double angle;
01506     std::string pattern;
01508     double originX;
01509     double originY;
01510 };
01511
01512
01513
01517 struct DXFLIB_EXPORT DL_HatchLoopData {
01521     DL_HatchLoopData() {}
01526     DL_HatchLoopData(int hNumEdges) {
01527         numEdges = hNumEdges;
01528     }
01529
01531     int numEdges;
01532 };
01533
01534
01535
01539 struct DXFLIB_EXPORT DL_HatchEdgeData {
01543     DL_HatchEdgeData() : defined(false), x1(0.0), y1(0.0), x2(0.0), y2(0.0) {
01544     }
01545
01550     DL_HatchEdgeData(double x1, double y1,
01551                     double x2, double y2) :
01552         defined(true),
01553         type(1),
01554         x1(x1),
01555         y1(y1),
01556         x2(x2),
01557         y2(y2) {
01558     }
01559
01564     DL_HatchEdgeData(double cx, double cy,
01565                     double radius,
01566                     double angle1, double angle2,
01567                     bool ccw) :
01568         defined(true),
01569         type(2),
01570         cx(cx),
01571         cy(cy),
01572         radius(radius),
01573         angle1(angle1),
01574         angle2(angle2),
01575         ccw(ccw) {
01576     }
01577
01582     DL_HatchEdgeData(double cx, double cy,
01583                     double mx, double my,
01584                     double ratio,
01585                     double angle1, double angle2,
01586                     bool ccw) :
01587         defined(true),
01588         type(3),
01589         cx(cx),
01590         cy(cy),
01591         angle1(angle1),
01592         angle2(angle2),
01593         ccw(ccw),
01594         mx(mx),
01595         my(my),
01596         ratio(ratio) {
01597     }
01598
01603     DL_HatchEdgeData(unsigned int degree,
01604                     bool rational,
01605                     bool periodic,
01606                     unsigned int nKnots,
01607                     unsigned int nControl,
01608                     unsigned int nFit,
01609                     const std::vector<double>& knots,
01610                     const std::vector<std::vector<double>>& controlPoints,
01611                     const std::vector<std::vector<double>>& fitPoints,
01612                     const std::vector<double>& weights,
01613                     double startTangentX,

```

```

01614             double startTangentY,
01615             double endTangentX,
01616             double endTangentY) :
01617     defined(true),
01618     type(4),
01619     degree(degree),
01620     rational(rational),
01621     periodic(periodic),
01622     nKnots(nKnots),
01623     nControl(nControl),
01624     nFit(nFit),
01625     controlPoints(controlPoints),
01626     knots(knots),
01627     weights(weights),
01628     fitPoints(fitPoints),
01629     startTangentX(startTangentX),
01630     startTangentY(startTangentY),
01631     endTangentX(endTangentX),
01632     endTangentY(endTangentY) {
01633 }
01634
01638 bool defined;
01639
01643 int type;
01644
01645 // line edges:
01646
01648 double x1;
01650 double y1;
01652 double x2;
01654 double y2;
01655
01657 double cx;
01659 double cy;
01661 double radius;
01663 double angle1;
01665 double angle2;
01667 bool ccw;
01668
01670 double mx;
01672 double my;
01674 double ratio;
01675
01676
01678 unsigned int degree;
01679 bool rational;
01680 bool periodic;
01682 unsigned int nKnots;
01684 unsigned int nControl;
01686 unsigned int nFit;
01687
01688 std::vector<std::vector<double> > controlPoints;
01689 std::vector<double> knots;
01690 std::vector<double> weights;
01691 std::vector<std::vector<double> > fitPoints;
01692
01693 double startTangentX;
01694 double startTangentY;
01695
01696 double endTangentX;
01697 double endTangentY;
01698
01700 std::vector<std::vector<double> > vertices;
01701 //bool closed;
01702 };
01703
01704
01705
01709 struct DXFLIB_EXPORT DL_ImageData {
01714     DL_ImageData(const std::string& iref,
01715                 double iipx, double iipy, double iipz,
01716                 double iux, double iuy, double iuz,
01717                 double ivx, double ivy, double ivz,
01718                 int iwidth, int iheight,
01719                 int ibrightness, int icontrast, int ifade) {
01720         ref = iref;
01721         ipx = iipx;
01722         ipy = iipy;
01723         ipz = iipz;
01724         ux = iux;
01725         uy = iuy;
01726         uz = iuz;
01727         vx = ivx;
01728         vy = ivy;
01729         vz = ivz;
01730         width = iwidth;
01731         height = iheight;

```

```

01732     brightness = ibrightness;
01733     contrast = icontrast;
01734     fade = ifade;
01735 }
01736
01739     std::string ref;
01741     double ipx;
01743     double ipy;
01745     double ipz;
01747     double ux;
01749     double uy;
01751     double uz;
01753     double vx;
01755     double vy;
01757     double vz;
01759     int width;
01761     int height;
01763     int brightness;
01765     int contrast;
01767     int fade;
01768 };
01769
01770
01771
01775 struct DXFLIB_EXPORT DL_ImageDefData {
01780     DL_ImageDefData(const std::string& iref,
01781                   const std::string& ifile) {
01782         ref = iref;
01783         file = ifile;
01784     }
01785
01788     std::string ref;
01789
01791     std::string file;
01792 };
01793
01794
01795
01799 struct DXFLIB_EXPORT DL_DictionaryData {
01800     DL_DictionaryData(const std::string& handle) : handle(handle) {}
01801     std::string handle;
01802 };
01803
01804
01805
01809 struct DXFLIB_EXPORT DL_DictionaryEntryData {
01810     DL_DictionaryEntryData(const std::string& name, const std::string& handle) :
01811         name(name), handle(handle) {}
01812
01813     std::string name;
01814     std::string handle;
01815 };
01816
01817 #endif
01818
01819 // EOF

```

6.7 dl_exception.h

```

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00024 *****/

```

```

00025
00026 #ifndef DL_EXCEPTION_H
00027 #define DL_EXCEPTION_H
00028
00029 #include "dl_global.h"
00030
00031 #if _MSC_VER > 1000
00032 #pragma once
00033 #endif // _MSC_VER > 1000
00034
00038 class DXFLIB_EXPORT DL_Exception {}
00039 ;
00040
00044 class DXFLIB_EXPORT DL_NullStrExc : public DL_Exception {}
00045 ;
00046
00050 class DXFLIB_EXPORT DL_GroupCodeExc : public DL_Exception {
00051     DL_GroupCodeExc(int gc=0) : groupCode(gc) {}
00052     int groupCode;
00053 };
00054 #endif
00055

```

6.8 dl_extrusion.h

```

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00021 ** not clear to you.
00022 **
00023 *****/
00024
00025 #ifndef DL_EXTRUSION_H
00026 #define DL_EXTRUSION_H
00027
00028 #include "dl_global.h"
00029
00030 #include <math.h>
00031
00032
00038 class DXFLIB_EXPORT DL_Extrusion {
00039 public:
00040     DL_Extrusion() {
00041         direction = new double[3];
00042         setDirection(0.0, 0.0, 1.0);
00043         setElevation(0.0);
00044     }
00045
00046     ~DL_Extrusion() {
00047         delete[] direction ;
00048     }
00049
00050     DL_Extrusion(double dx, double dy, double dz, double elevation) {
00051         direction = new double[3];
00052         setDirection(dx, dy, dz);
00053         setElevation(elevation);
00054     }
00055
00056     void setDirection(double dx, double dy, double dz) {
00057         direction[0]=dx;

```

```

00081     direction[1]=dy;
00082     direction[2]=dz;
00083 }
00084
00085
00086
00090     double* getDirection() const {
00091         return direction;
00092     }
00093
00094
00095
00099     void getDirection(double dir[]) const {
00100         dir[0]=direction[0];
00101         dir[1]=direction[1];
00102         dir[2]=direction[2];
00103     }
00104
00105
00106
00110     void setElevation(double elevation) {
00111         this->elevation = elevation;
00112     }
00113
00114
00115
00119     double getElevation() const {
00120         return elevation;
00121     }
00122
00123
00124
00128     DL_Extrusion operator = (const DL_Extrusion& extru) {
00129         setDirection(extru.direction[0], extru.direction[1], extru.direction[2]);
00130         setElevation(extru.elevation);
00131
00132         return *this;
00133     }
00134
00135
00136
00137 private:
00138     double *direction;
00139     double elevation;
00140 };
00141
00142 #endif
00143

```

6.9 dl_global.h

```

00001 #if defined(DXFLIB_DLL)
00002 #   ifdef _WIN32
00003 #       if defined(DXFLIB_LIBRARY)
00004 #           define DXFLIB_EXPORT __declspec(dllexport)
00005 #       else
00006 #           define DXFLIB_EXPORT __declspec(dllimport)
00007 #       endif
00008 #   else
00009 #       define DXFLIB_EXPORT
00010 #   endif
00011 #else
00012 #   define DXFLIB_EXPORT
00013 #endif

```

6.10 dl_writer.h

```

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00022 ** not clear to you.
00023 **
00024 *****/
00025
00026 #ifndef DL_WRITER_H
00027 #define DL_WRITER_H
00028
00029 #include "dl_global.h"
00030
00031 #ifndef _WIN32
00032 #include <strings.h>
00033 #endif
00034
00035 #if _MSC_VER > 1000
00036 #pragma once
00037 #endif // _MSC_VER > 1000
00038
00039 #include <cstring>
00040 #include <iostream>
00041 #include <algorithm>
00042
00043 #include "dl_attributes.h"
00044 #include "dl_codes.h"
00045
00046
00047
00058 class DXFLIB_EXPORT DL_Writer {
00059 public:
00063     DL_Writer(DL_Codes::version version) : m_handle(0x30) {
00064         this->version = version;
00065         modelSpaceHandle = 0;
00066         paperSpaceHandle = 0;
00067         paperSpace0Handle = 0;
00068     }
00069
00070     virtual ~DL_Writer() {}
00071     ;
00072
00082     void section(const char* name) const {
00083         dxflibString(0, "SECTION");
00084         dxflibString(2, name);
00085     }
00086
00097     void sectionHeader() const {
00098         section("HEADER");
00099     }
00100
00111     void sectionTables() const {
00112         section("TABLES");
00113     }
00114
00125     void sectionBlocks() const {
00126         section("BLOCKS");
00127     }
00128
00139     void sectionEntities() const {
00140         section("ENTITIES");
00141     }
00142
00153     void sectionClasses() const {
00154         section("CLASSES");
00155     }
00156
00167     void sectionObjects() const {
00168         section("OBJECTS");
00169     }
00170
00179     void sectionEnd() const {
00180         dxflibString(0, "ENDSEC");
00181     }
00182
00195     void table(const char* name, int num, int h=0) const {
00196         dxflibString(0, "TABLE");
00197         dxflibString(2, name);
00198         if (version>=DL_VERSION_2000) {
00199             if (h==0) {
00200                 handle();
00201             }

```

```

00202         else {
00203             dxfHex(5, h);
00204         }
00205         dxfString(100, "AcDbSymbolTable");
00206     }
00207     dxfInt(70, num);
00208 }
00209
00223 void tableLayers(int num) const {
00224     table("LAYER", num, 2);
00225 }
00226
00240 void tableLinetypes(int num) const {
00241     //linetypeHandle = 5;
00242     table("LTYPE", num, 5);
00243 }
00244
00258 void tableAppid(int num) const {
00259     table("APPID", num, 9);
00260 }
00261
00275 void tableStyle(int num) const {
00276     table("STYLE", num, 3);
00277 }
00278
00287 void tableEnd() const {
00288     dxfString(0, "ENDTAB");
00289 }
00290
00299 void dxfEOF() const {
00300     dxfString(0, "EOF");
00301 }
00302
00311 void comment(const char* text) const {
00312     dxfString(999, text);
00313 }
00314
00325 void entity(const char* entTypeName) const {
00326     dxfString(0, entTypeName);
00327     if (version>=DL_VERSION_2000) {
00328         handle();
00329     }
00330 }
00331
00346 void entityAttributes(const DL_Attributes& attrib) const {
00347
00348     // layer name:
00349     dxfString(8, attrib.getLayer());
00350
00351     // R12 doesn't accept BYLAYER values. The value has to be missing
00352     // in that case.
00353     if (version>=DL_VERSION_2000 || attrib.getColor()!=256) {
00354         dxfInt(62, attrib.getColor());
00355     }
00356     if (version>=DL_VERSION_2000 && attrib.getColor24()!=-1) {
00357         dxfInt(420, attrib.getColor24());
00358     }
00359     if (version>=DL_VERSION_2000) {
00360         dxfInt(370, attrib.getWidth());
00361     }
00362     if (version>=DL_VERSION_2000) {
00363         dxfReal(48, attrib.getLinetypeScale());
00364     }
00365     std::string linetype = attrib.getLinetype();
00366     std::transform(linetype.begin(), linetype.end(), linetype.begin(), ::toupper);
00367     if (version>=DL_VERSION_2000 || linetype=="BYLAYER") {
00368         dxfString(6, attrib.getLinetype());
00369     }
00370 }
00371
00375 void subClass(const char* sub) const {
00376     dxfString(100, sub);
00377 }
00378
00387 void tableLayerEntry(unsigned long int h=0) const {
00388     dxfString(0, "LAYER");
00389     if (version>=DL_VERSION_2000) {
00390         if (h==0) {
00391             handle();
00392         } else {
00393             dxfHex(5, h);
00394         }
00395         dxfString(100, "AcDbSymbolTableRecord");
00396         dxfString(100, "AcDbLayerTableRecord");
00397     }
00398 }
00399

```

```

00408 void tableLinetypeEntry(unsigned long int h=0) const {
00409     dxfString(0, "LTYPE");
00410     if (version>=DL_VERSION_2000) {
00411         if (h==0) {
00412             handle();
00413         } else {
00414             dxfHex(5, h);
00415         }
00416         //dxfHex(330, 0x5);
00417         dxfString(100, "AcDbSymbolTableRecord");
00418         dxfString(100, "AcDbLinetypeTableRecord");
00419     }
00420 }
00421
00430 void tableAppidEntry(unsigned long int h=0) const {
00431     dxfString(0, "APPID");
00432     if (version>=DL_VERSION_2000) {
00433         if (h==0) {
00434             handle();
00435         } else {
00436             dxfHex(5, h);
00437         }
00438         //dxfHex(330, 0x9);
00439         dxfString(100, "AcDbSymbolTableRecord");
00440         dxfString(100, "AcDbRegAppTableRecord");
00441     }
00442 }
00443
00452 void sectionBlockEntry(unsigned long int h=0) const {
00453     dxfString(0, "BLOCK");
00454     if (version>=DL_VERSION_2000) {
00455         if (h==0) {
00456             handle();
00457         } else {
00458             dxfHex(5, h);
00459         }
00460         //dxfHex(330, blockHandle);
00461         dxfString(100, "AcDbEntity");
00462         if (h==0x1C) {
00463             dxfInt(67, 1);
00464         }
00465         dxfString(8, "0"); // TODO: Layer for block
00466         dxfString(100, "AcDbBlockBegin");
00467     }
00468 }
00469
00478 void sectionBlockEntryEnd(unsigned long int h=0) const {
00479     dxfString(0, "ENDBLK");
00480     if (version>=DL_VERSION_2000) {
00481         if (h==0) {
00482             handle();
00483         } else {
00484             dxfHex(5, h);
00485         }
00486         //dxfHex(330, blockHandle);
00487         dxfString(100, "AcDbEntity");
00488         if (h==0x1D) {
00489             dxfInt(67, 1);
00490         }
00491         dxfString(8, "0"); // TODO: Layer for block
00492         dxfString(100, "AcDbBlockEnd");
00493     }
00494 }
00495
00496 void color(int col=256) const {
00497     dxfInt(62, col);
00498 }
00499 void linetype(const char *lt) const {
00500     dxfString(6, lt);
00501 }
00502 void linetypeScale(double scale) const {
00503     dxfReal(48, scale);
00504 }
00505 void lineWeight(int lw) const {
00506     dxfInt(370, lw);
00507 }
00508
00509 void coord(int gc, double x, double y, double z=0) const {
00510     dxfReal(gc, x);
00511     dxfReal(gc+10, y);
00512     dxfReal(gc+20, z);
00513 }
00514
00515 void coordTriplet(int gc, const double* value) const {
00516     if (value) {
00517         dxfReal(gc, *value++);
00518         dxfReal(gc+10, *value++);

```

```

00519         dxfReal(gc+20, *value++);
00520     }
00521 }
00522
00523 void resetHandle() const {
00524     m_handle = 1;
00525 }
00526
00530 unsigned long handle(int gc=5) const {
00531     // handle has to be hex
00532     dxfHex(gc, m_handle);
00533     return m_handle++;
00534 }
00535
00539 unsigned long getNextHandle() const {
00540     return m_handle;
00541 }
00542
00550 virtual void dxfReal(int gc, double value) const = 0;
00551
00559 virtual void dxfInt(int gc, int value) const = 0;
00560
00568 virtual void dxfBool(int gc, bool value) const {
00569     dxfInt(gc, (int)value);
00570 }
00571
00579 virtual void dxfHex(int gc, int value) const = 0;
00580
00588 virtual void dxfString(int gc, const char* value) const = 0;
00589
00597 virtual void dxfString(int gc, const std::string& value) const = 0;
00598
00599 protected:
00600     mutable unsigned long m_handle;
00601     mutable unsigned long modelSpaceHandle;
00602     mutable unsigned long paperSpaceHandle;
00603     mutable unsigned long paperSpace0Handle;
00604
00608     DL_Codes::version version;
00609 private:
00610 };
00611
00612 #endif

```

6.11 dl_writer_ascii.h

```

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00023 **
00024 *****/
00025
00026 #ifndef DL_WRITER_ASCII_H
00027 #define DL_WRITER_ASCII_H
00028
00029 #include "dl_global.h"
00030
00031 #if _MSC_VER > 1000
00032 #pragma once
00033 #endif // _MSC_VER > 1000
00034
00035 #include "dl_writer.h"
00036 #include <fstream>
00037 #include <string>

```

```
00038
00049 class DXFLIB_EXPORT DL_WriterA : public DL_Writer {
00050 public:
00051     DL_WriterA(const char* fname, DL_Codes::version version=DL_VERSION_2000)
00052         : DL_Writer(version), m_ofile(fname) {}
00053     virtual ~DL_WriterA() {}
00054
00055     bool openFailed() const;
00056     void close() const;
00057     void dxfReal(int gc, double value) const;
00058     void dxfInt(int gc, int value) const;
00059     void dxfHex(int gc, int value) const;
00060     void dxfString(int gc, const char* value) const;
00061     void dxfString(int gc, const std::string& value) const;
00062
00063     static void strReplace(char* str, char src, char dest);
00064
00065 private:
00069     mutable std::ofstream m_ofile;
00070
00071 };
00072
00073 #endif
00074
```


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