

Project: Layout Exchange Format 1.0



Point of departure

There are several programs for data post processing in the market.

These different automated reporting systems create proprietary layout files which describe the graphical content of reports (e.g. test protocols for engine test bench or crash test protocols).

But the usage of these files in different programs is impossible due to different structures.

Objective and benefit

A standardized layout format is developed to increase the compliance between reporting systems and data post processing applications.

This is achieved by defining the tags and the structure of these layout files.

These layout files are pure XML-files. Thus, there is no dependency on specific technologies; especially layout files can be interchanged between applications running on Java, Windows, dotNet and other systems very easily.

Realisation/Implementation

The target was to cover of a wide range of base functionalities.

Therefore, some reporting tools were compared to determine common features and differences.

Depending on the necessary features, specified in the requirement specification, a XML-structure, represented as a schema file, was defined.

This file describes the supported tags and attributes in detail.

The layout exchange format files gets the suffix *.lxf*

Excerpt of schema definition

Description of a cartesian chart (2D)

```
<xs:element name="CartesianChart2D">
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="BaseGraphic">
        <xs:sequence>
          <xs:element ref="CartesianAxisSystem2D"/>
          <xs:element ref="CartesianCurveSet2D"/>
          <xs:element ref="Legend"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:element>
```

The element CartesianChart2D extends the base type BaseGraphic and describes the appearance of a two-dimensional Cartesian curve chart. This chart element includes base settings of the graphic object, settings of axes (CartesianAxisSystem2D), *curves* (CartesianCurveSet2D) and the legend (Legend).

XML Synthax of a Cartesian chart 2D in lxf-file (part 1)

```

<CartesianChart2D name="Chart">
  <Settings movable="true" resizable="true" modifiable="true" printable="true">
    <Bounds>
      <Location x="0" y="0"/>
      <Dimension height="90" width="105"/>
    </Bounds>
  </Settings>
  <CartesianAxisSystem2D>
    <XAxis length="75" scalingMode="auto">
      <Location x="20" y="80"/>
    </XAxis>
    <YAxis length="75" scalingMode="manual">
      <Scaling type="linear" minimum="-1" maximum="1"/>
      <Ticks>
        <MajorTicks delta="0.4" count="6">
          <Grid width="0.5" style="solid">
            <Color alpha="100" color="gray"/>
          </Grid>
        </MajorTicks>
        <MinorTicks count="1"/>
      </Ticks>
      <Location x="30" y="77"/>
    </YAxis>
    <YAxis length="54" scalingMode="auto">
      <Location x="15" y="57"/>
    </YAxis>
  </CartesianAxisSystem2D>
  ...
</CartesianChart2D>

```

XML Synthax of a Cartesian chart 2D in lxf-file (part 2)

```

<CartesianChart2D name="Chart">
  ...
  <CartesianCurveSet2D>
    <LineCurve xAxisIndex="1" yAxisIndex="1">
      <XInput item="..." component="..." path="..."/>
      <YInput item="..." component="..." path="..."/>
      <Line width="0.5" style="solid">
        <Color alpha="100" color="red"/>
      </Line>
    </LineCurve>
    <LineCurve xAxisIndex="1" yAxisIndex="2">
      ...
    </LineCurve>
  </CartesianCurveSet2D>
  <Legend orientation="horizontal">
    <Font strikethrough="false" italic="false" size="7" bold="false" superior="false" name="Arial" inferior="false"
      underline="false"/>
    <Docking position="bottom"/>
    <Content>
      <ItemProperty item="..." component="..." name="name"/>
    </Content>
  </Legend>
</CartesianChart2D>

```

Example of a Cartesian chart 2D

