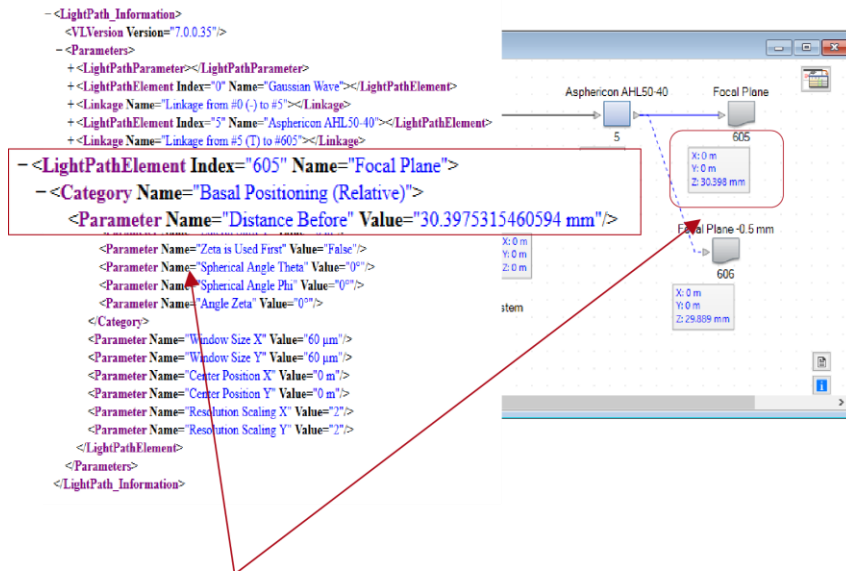


Light Path Diagram Information Export

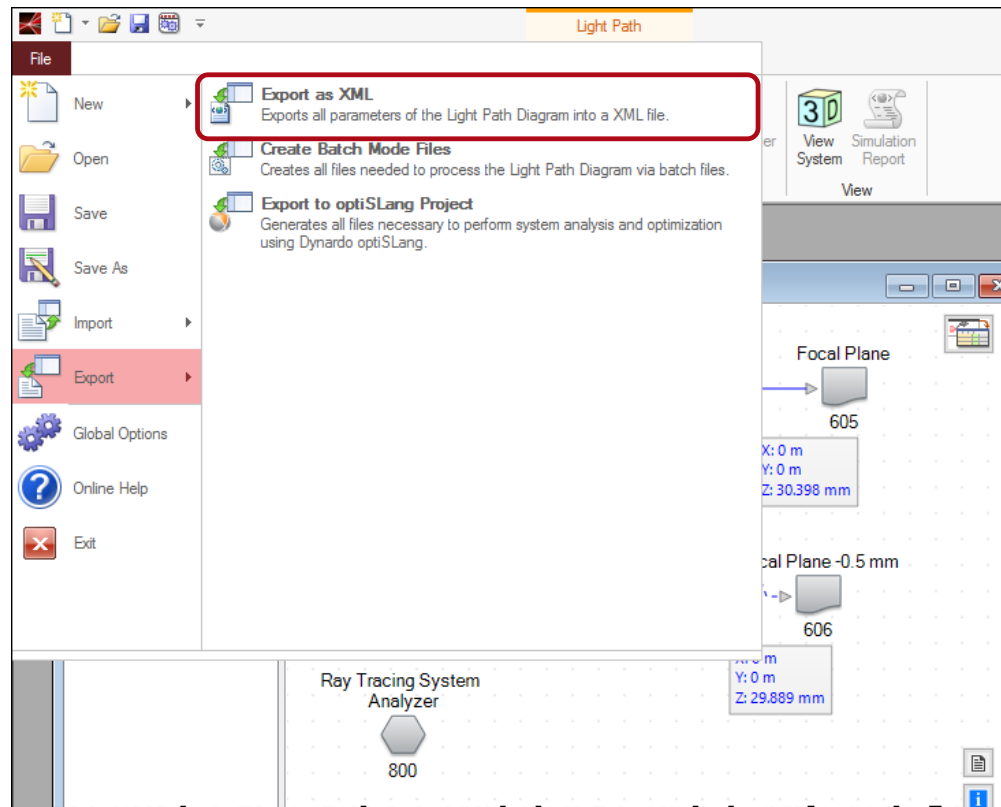
Abstract



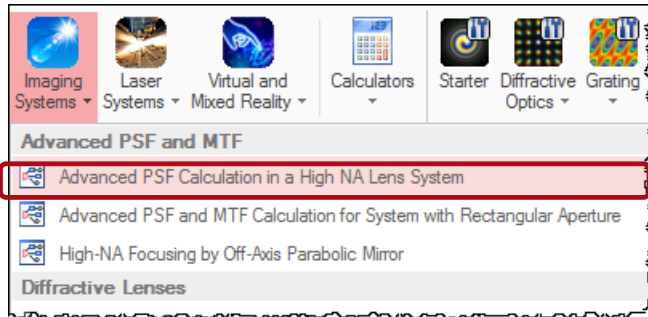
In VirtualLab Fusion, users define the optical system by the light path diagram. You can export a summary of all system parameters in the light path diagram into an XML File. In the generated file all parameters of system are given with name and value. Using a standard web browser allows the user friendly display of the content of the XML file. This use case shows how to export the parameters and how to visualize the parameter file within a text editor and a web browser.

Modeling Task

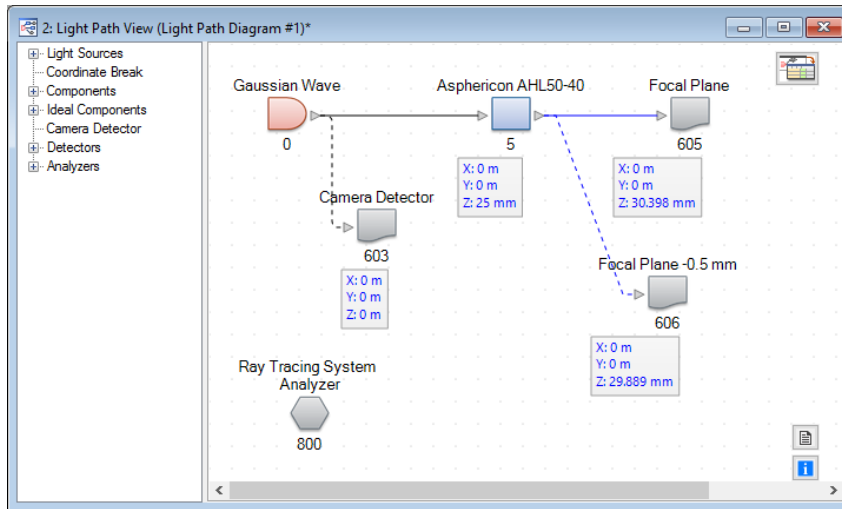
- how to export the light path diagram parameters into XML file, and open it by text editor or internet browser.



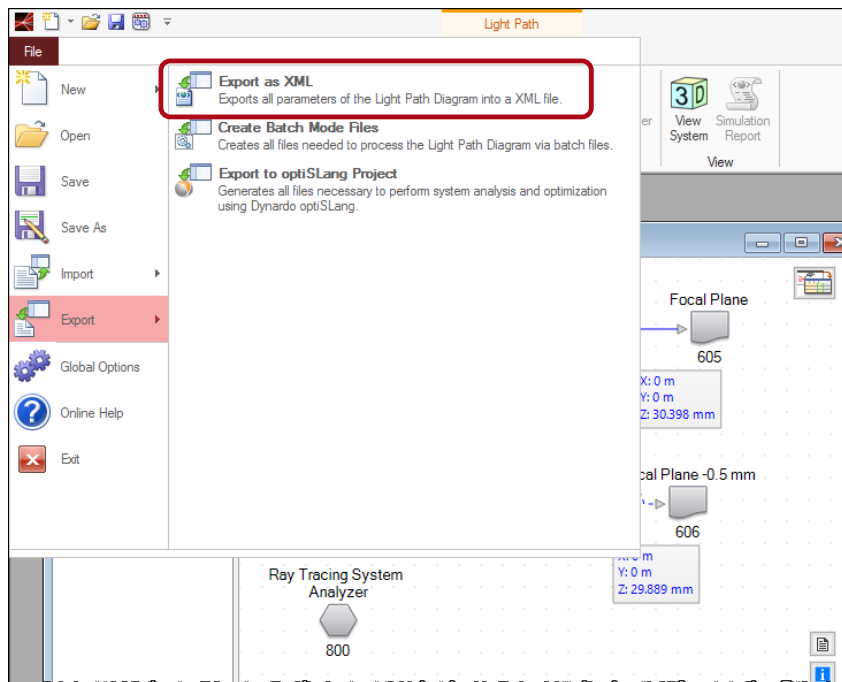
System Setup



- For demonstration of the export operation use take the use case „Advanced PSF Calculation with High NA Lens System“ as an example. The export functionality is supported by any optical setup.



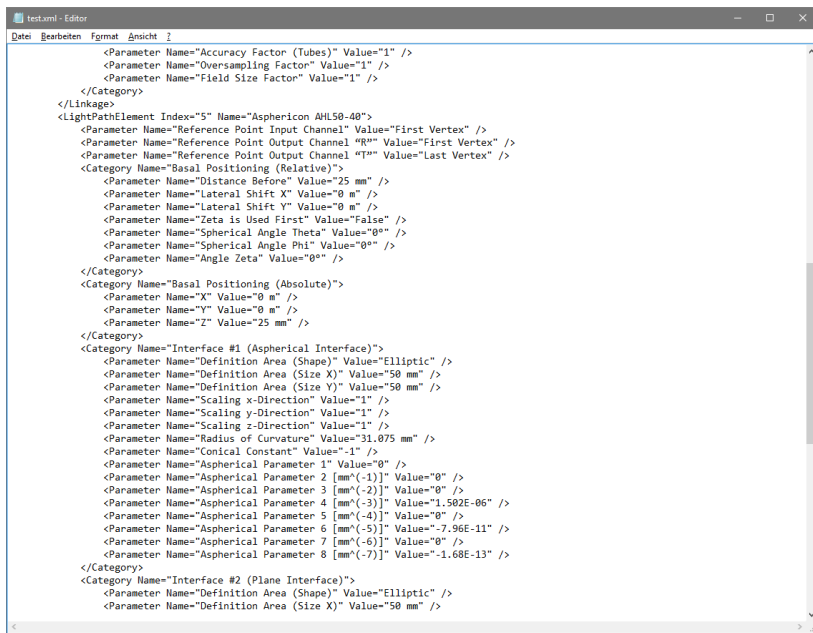
Export as a XML-File



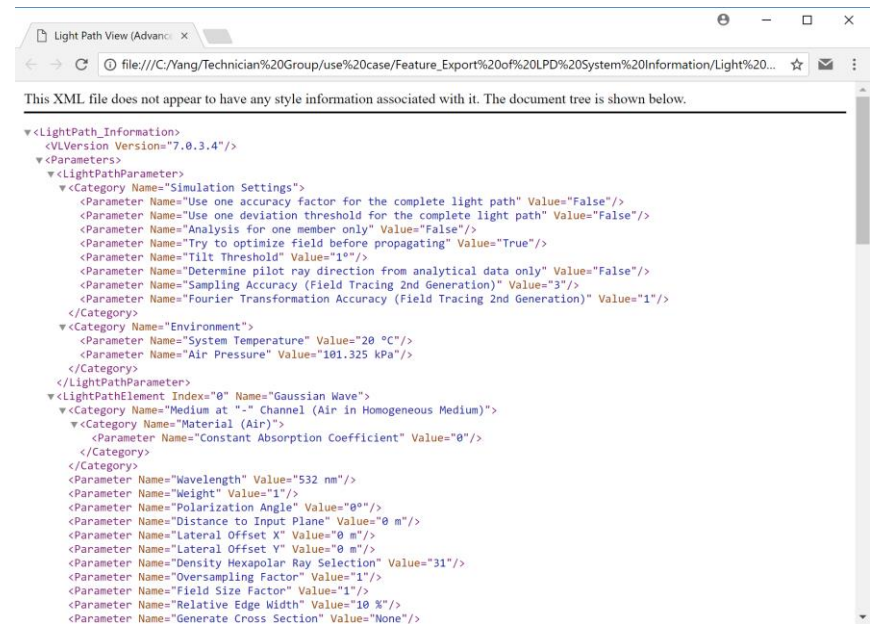
- Select the light path diagram and we will export its parameters in what follows.
- Go to File/Export/Export as XML and save the XML file.

Open with Text Editor or Internet Browser

- You can open the resulting XML file with a text editor or a internet browser for extended features, like a structurabled menu.



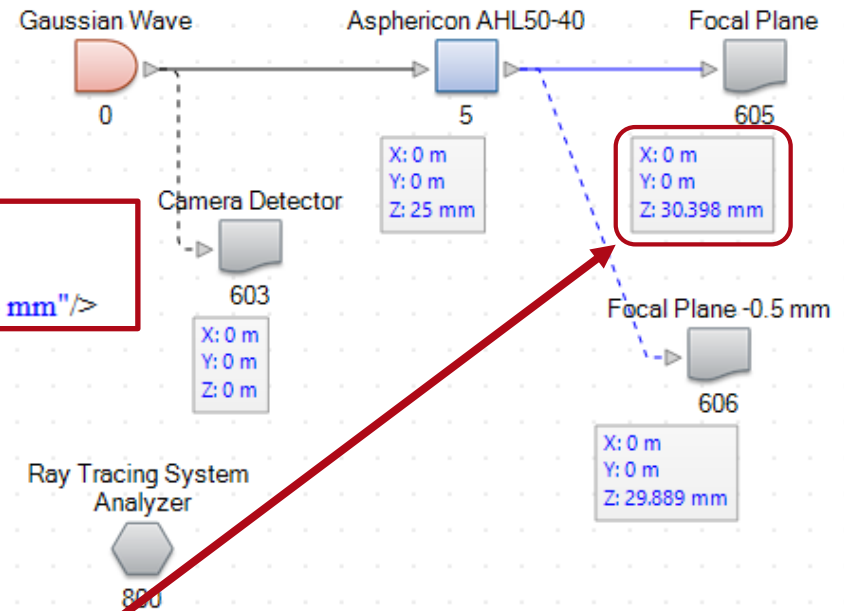
```
testaml - Editor
Datei Bearbeiten Format Ansicht ?
<Parameter Name="Accuracy Factor (Tubes)" Value="1" />
<Parameter Name="Oversampling Factor" Value="1" />
<Parameter Name="Field Size Factor" Value="1" />
</Category>
</Linkage>
<LightPathElement Index="5" Name="Asphericon AHL50-40">
  <Parameter Name="Reference Point Input Channel" Value="First Vertex" />
  <Parameter Name="Reference Point Output Channel "RPM" Value="First Vertex" />
  <Parameter Name="Reference Point Output Channel "TPM" Value="Last Vertex" />
  <Category Name="Basal Positioning (Relative)">
    <Parameter Name="Distance Before" Value="25 mm" />
    <Parameter Name="Lateral Shift X" Value="0 m" />
    <Parameter Name="Lateral Shift Y" Value="0 m" />
    <Parameter Name="Zeta is Used First" Value="False" />
    <Parameter Name="Spherical Angle Theta" Value="0°" />
    <Parameter Name="Spherical Angle Phi" Value="0°" />
    <Parameter Name="Angle Zeta" Value="0°" />
  </Category>
  <Category Name="Basal Positioning (Absolute)">
    <Parameter Name="X" Value="0 m" />
    <Parameter Name="Y" Value="0 m" />
    <Parameter Name="Z" Value="25 mm" />
  </Category>
  <Category Name="Interface #1 (Aspherical Interface)">
    <Parameter Name="Definition Area (Shape)" Value="Elliptic" />
    <Parameter Name="Definition Area (Size X)" Value="50 mm" />
    <Parameter Name="Definition Area (Size Y)" Value="50 mm" />
    <Parameter Name="Scaling x-Direction" Value="1" />
    <Parameter Name="Scaling y-Direction" Value="1" />
    <Parameter Name="Scaling z-Direction" Value="1" />
    <Parameter Name="Radius of Curvature" Value="31.075 mm" />
    <Parameter Name="Conical Constant" Value="-1" />
    <Parameter Name="Aspherical Parameter 1" Value="0" />
    <Parameter Name="Aspherical Parameter 2 [mm^(-1)]" Value="0" />
    <Parameter Name="Aspherical Parameter 3 [mm^(-2)]" Value="0" />
    <Parameter Name="Aspherical Parameter 4 [mm^(-3)]" Value="1.502E-06" />
    <Parameter Name="Aspherical Parameter 5 [mm^(-4)]" Value="0" />
    <Parameter Name="Aspherical Parameter 6 [mm^(-5)]" Value="-7.96E-11" />
    <Parameter Name="Aspherical Parameter 7 [mm^(-6)]" Value="0" />
    <Parameter Name="Aspherical Parameter 8 [mm^(-7)]" Value="-1.68E-13" />
  </Category>
  <Category Name="Interface #2 (Plane Interface)">
    <Parameter Name="Definition Area (Shape)" Value="Elliptic" />
    <Parameter Name="Definition Area (Size X)" Value="50 mm" />
  </Category>
</LightPathElement>
```



```
Light Path View (Advanced)
file:///C:/Yang/Technician%20Group/use%20case/Feature_Export%20of%20LPD%20System%20Information/Light%20...
This XML file does not appear to have any style information associated with it. The document tree is shown below.
<LightPath_Information>
  <VLVersion Version="7.0.3.4"/>
  <Parameters>
    <LightPathParameter>
      <Category Name="Simulation Settings">
        <Parameter Name="Use one accuracy factor for the complete light path" Value="False"/>
        <Parameter Name="Use one deviation threshold for the complete light path" Value="False"/>
        <Parameter Name="Analysis for one member only" Value="False"/>
        <Parameter Name="Try to optimize field before propagating" Value="True"/>
        <Parameter Name="Tilt Threshold" Value="1°"/>
        <Parameter Name="Determine pilot ray direction from analytical data only" Value="False"/>
        <Parameter Name="Sampling Accuracy (Field Tracing 2nd Generation)" Value="3"/>
        <Parameter Name="Fourier Transformation Accuracy (Field Tracing 2nd Generation)" Value="1"/>
      </Category>
      <Category Name="Environment">
        <Parameter Name="System Temperature" Value="20 °C"/>
        <Parameter Name="Air Pressure" Value="101.325 kPa"/>
      </Category>
    </LightPathParameter>
    <LightPathElement Index="0" Name="Gaussian Wave">
      <Category Name="Medium at "-" Channel (Air in Homogeneous Medium)">
        <Category Name="Material (Air)">
          <Parameter Name="Constant Absorption Coefficient" Value="0"/>
        </Category>
      </Category>
      <Category Name="Wavelength" Value="532 nm"/>
      <Parameter Name="Weight" Value="1"/>
      <Parameter Name="Polarization Angle" Value="90°"/>
      <Parameter Name="Distance to Input Plane" Value="0 m"/>
      <Parameter Name="Lateral Offset X" Value="0 m"/>
      <Parameter Name="Lateral Offset Y" Value="0 m"/>
      <Parameter Name="Density Hexapolar Ray Selection" Value="31"/>
      <Parameter Name="Oversampling Factor" Value="1"/>
      <Parameter Name="Field Size Factor" Value="1"/>
      <Parameter Name="Relative Edge Width" Value="10 %"/>
      <Parameter Name="Generate Cross Section" Value="None"/>
    </LightPathElement>
  </Parameters>
</LightPath_Information>
```

Parameters in XML File

```
-<LightPath_Information>
  <VLVersion Version="7.0.0.35"/>
  -<Parameters>
    +<LightPathParameter></LightPathParameter>
    +<LightPathElement Index="0" Name="Gaussian Wave"></LightPathElement>
    +<Linkage Name="Linkage from #0 (-) to #5"></Linkage>
    +<LightPathElement Index="5" Name="Asphericon AHL50-40"></LightPathElement>
    +<LightPathElement Index="603" Name="Camera Detector"></LightPathElement>
    +<LightPathElement Index="605" Name="Focal Plane"></LightPathElement>
    +<LightPathElement Index="606" Name="Focal Plane -0.5 mm"></LightPathElement>
    +<LightPathElement Index="800" Name="Ray Tracing System Analyzer"></LightPathElement>
  -<LightPathElement Index="605" Name="Focal Plane">
    -<Category Name="Basal Positioning (Relative)">
      <Parameter Name="Distance Before" Value="30.3975315460594 mm"/>
      <Parameter Name="Lateral Shift Y" Value="0 m"/>
      <Parameter Name="Zeta is Used First" Value="False"/>
      <Parameter Name="Spherical Angle Theta" Value="0°"/>
      <Parameter Name="Spherical Angle Phi" Value="0°"/>
      <Parameter Name="Angle Zeta" Value="0°"/>
    </Category>
    <Parameter Name="Window Size X" Value="60 μm"/>
    <Parameter Name="Window Size Y" Value="60 μm"/>
    <Parameter Name="Center Position X" Value="0 m"/>
    <Parameter Name="Center Position Y" Value="0 m"/>
    <Parameter Name="Resolution Scaling X" Value="2"/>
    <Parameter Name="Resolution Scaling Y" Value="2"/>
  </LightPathElement>
  </Parameters>
</LightPath_Information>
```



All system configuration parameters like positioning, orientation, component sizes and component specific properties can be found in the XML file.

Document Information

title	Light Path Diagram Information Export
version	1.0
VL version used for simulations	7.0.3.4
category	Feature Use Case
