UseCase.0017 (1.0)

Media Catalog

Keywords: optical medium, material, homogeneous, inhomogeneous
Description

• This use case explains how the media catalog of VirtualLab shall be used.

• Media can be homogeneous or inhomogeneous.
  – Homogeneous media are defined by materials from the materials catalogs.
  – Inhomogeneous media are typically defined by materials and an refractive index modulation.

• The media catalog can be accessed by the corresponding item in the catalog ribbon.
Media Catalog – Templates

• In the templates the following types are available:
  – Aperture medium
  – Fiber medium
  – GRIN medium
  – Inclusion medium
  – Pillar medium
  – Sampled medium
  – Programmable medium
  – Homogeneous medium
  – Volume grating medium
The preview of the medium shows the 2D refractive index distribution of the selected medium.

The user can define the extension of the area to be visualized.

In addition the user can define the orientation of the plane to view in 3D space.
Media Preview

- For the visualization of the medium the user can specify additional view parameters.
- The user can define the
  - Wavelength
  - Accuracy factor (linear scaling of the data points to be evaluated)
  - Scaling (automatic scaling, or manual scaling with user defined minimum/maximum value)
Store Media Into Catalogs

- By editing a medium the user can specify the characteristics of the medium (including possible base material and modulations).
- After this is done, the medium can be saved as user-defined entry in the catalog by clicking on the save to catalog button.
Catalog Access to Media Catalog

- The media catalog can be accessed on every position within the VirtualLab where a medium needs to be specified.
- Adjacent the table within the edit dialog of the optical interface sequence (OIS) component is shown, which is one example for the access to the media catalog.
Summary

• Optical media are used to define the distribution of refractive indices (and absorption values) between optical surfaces.

• The media catalog allows to store user-defined media into a database, which can be accessed on all relevant dialogs within VirtualLab.

• The preview of the media within the catalog gives a first impression of the selected media. This is especially helpful for index-modulated (inhomogeneous) media.