News in Field-Map Scripting
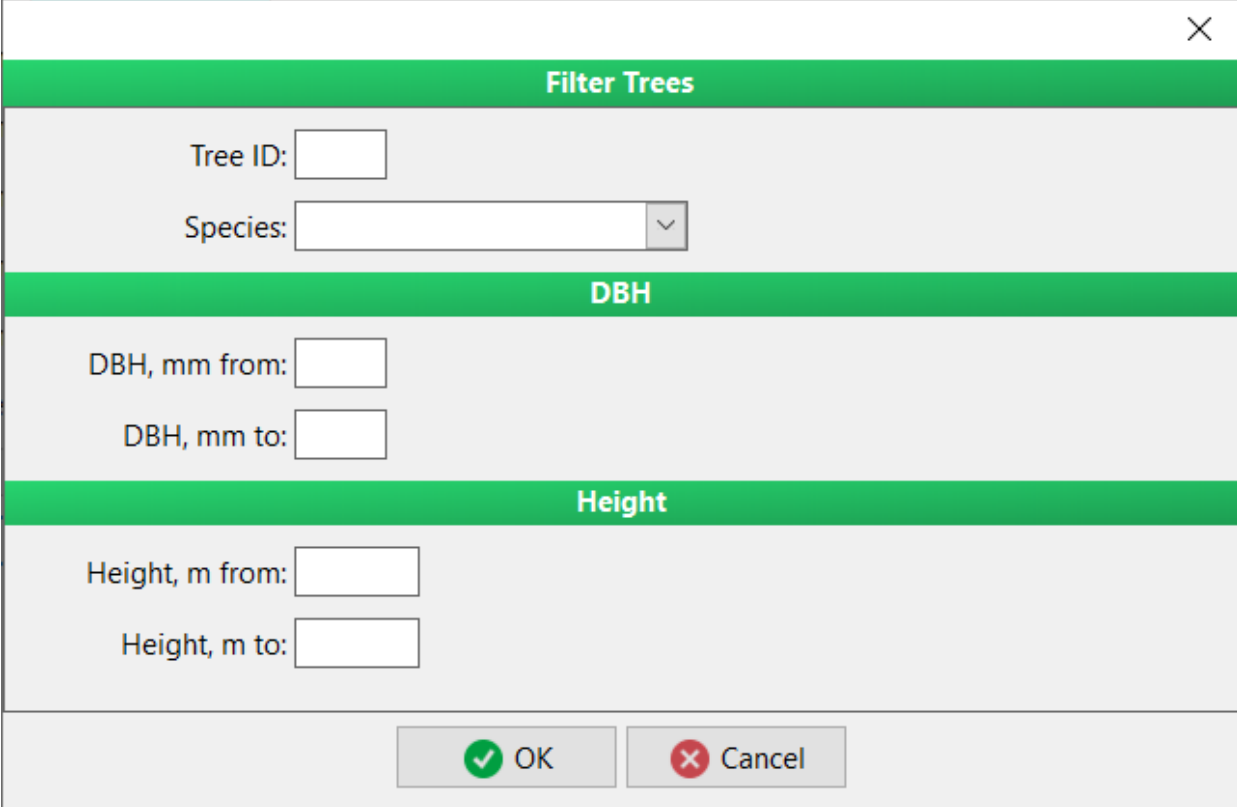## Versions X9 and 20

IFER – Monitoring and Mapping Solutions Ltd.

Basic information

▶ Scripting engine is still evolving

▶ Over 100 new functions were implemented in Field-Map version 20

▶ Documentation is being continually updated

▶ Move from using dll extensions to using scripts

▶ 6 new scripting events

User Interface and Control Functions

Value Dialog

▶ Input multiple values in one dialog

▶ Possibility to input dates and choose from lookup lists

▶ Can be used with virtual keyboard

Value Dialog

▶ Add fields to the dialog window:

 ▶ Integer (`procedure AddInteger`)

 ▶ Float (`procedure AddFloat`)

 ▶ String (`procedure AddString`)

 ▶ Lookup list (`procedure AddLookupList`)

 ▶ Date (`procedure AddDate`)

▶ Separate fields using headers (`procedure AddHeader`)

▶ Show the dialog to the user (`function InputValues`)

▶ Access values after the dialog is closed:

 ▶ By field index (`property Value[i]`)

 ▶ By field label (`function ValueByLabel`)

Attribute Editor

▶ Allows changing values directly from the map window by using the OnDoubleClickToMap event
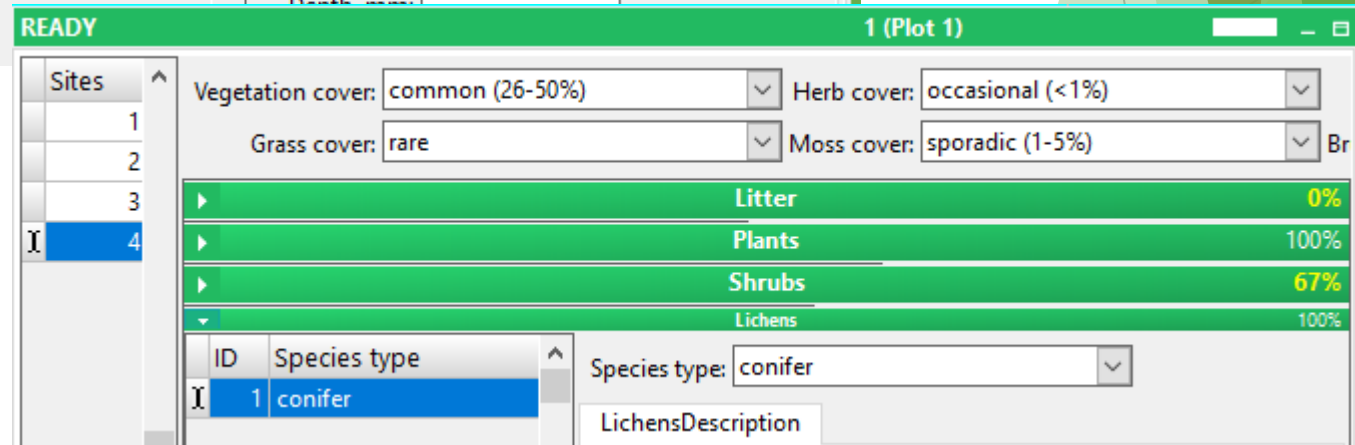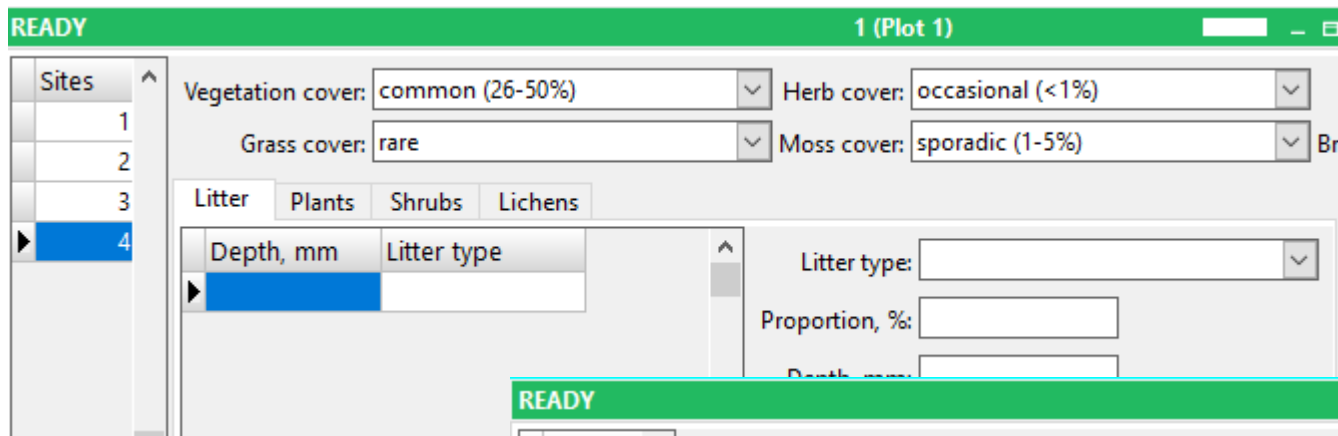
▶ Can change multiple values at once

Attribute Editor

- Add attribute to the attribute editor
  - `function AddAttribute(LayerName_,AttributeName_ :string, ShowKeyboardHint_ :boolean)`
- Disable/enable finger controls
  - `property FingerControl :boolean`
- Override color settings of the changed fields
  - `property ColoredPanels :boolean`
- Show the attribute editor to the user at specified coordinates (of the screen)
  - `functionShow(const Xpos,Ypos :integer) :Boolean`
  - If (-1,-1) is used as coordinates, the dialog opens in the screen center

Panels in Scroll Box

▶ Set container type

    ▶ `property ContainerType :string {NOTEBOOK,SCROLLBOX}`

Panels in Scroll Box

▶ Manage scroll box bar color, header, caption, secondary caption
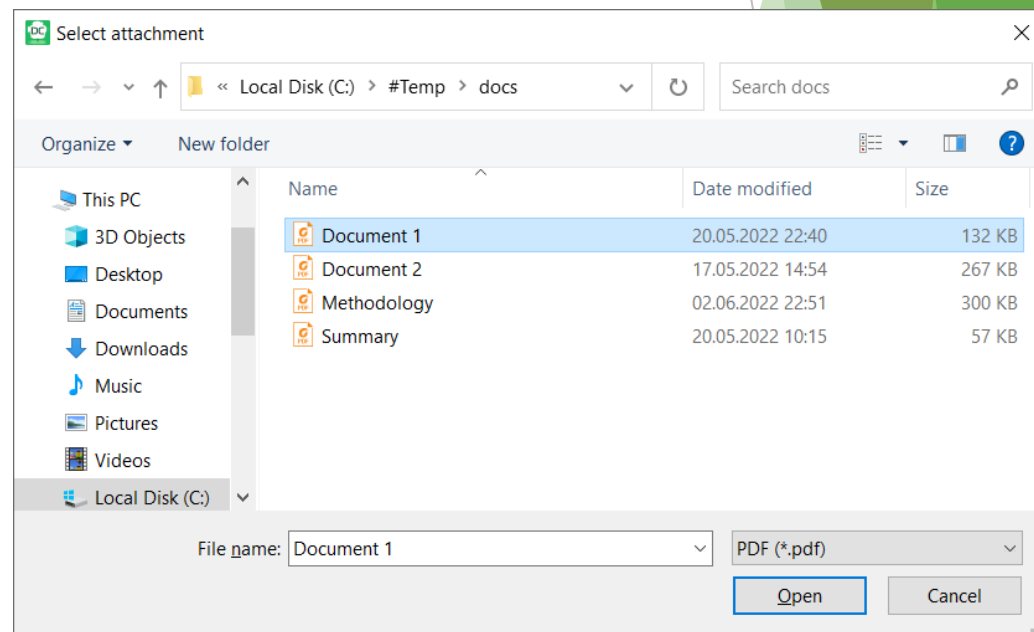
Panels in Scroll Box

- ▶ Expand / collapse scroll box
    - ▶ `procedure ComboPanelCollapse`
    - ▶ `Procedure ComboPanelExpand`
    - ▶ `procedure CollapseAllComboPanels`
    - ▶ `Procedure ExpandAllComboPanels`
- ▶ Events triggered by changes in scroll box
    - ▶ OnComboPanelCollapse
    - ▶ OnComboPanelExpand

Miscellaneous User Interface Functions

▶ Open virtual keyboard for specified attribute by script:

    ▶ `procedure ShowVirtualKeyboard(const name :string)`

▶ File picker dialog:

    ▶ `function ExecuteFileDialog(const Caption_, InitialDir_, Filter_ :string) :string`

System Functions

Working with files

▶ Store and load files in BLOB fields

▶ BLOB fields work with synchronization – files can easily be transferred to the server and between users

▶ Store file to BLOB field:

    ▶ ```
function File2Blob(const SourceFilename_,BlobAttributeName_
:string) :boolean
```

▶ Save file from BLOB to folder:

    ▶ ```
function Blob2Folder(const DestFolder_,BlobAttributeName_
:string) :Boolean
```

▶ Can be used in combination with file picker dialog and function OpenFileByWindowsAssociation

Events OnEnterControl and OnExitControl

▶ Layer events

▶ Events are triggered when the cursor enter a field and when it exits (by pressing tab or enter or by clicking to another field)

▶ Two global variables are automatically filled that can be used in scripts:

  ▶ SenderLayer

  ▶ SenderAttribute

Mapping and Measuring Functions

Conversion to and from WGS84

- New functions to convert coordinates between projection used in Field-Map and WGS84

- Convert coordinates to WGS84:

  - `function ProjectionToWGS84(const Y,X :double; out Lat,Lon :double) :boolean`

- Convert coordinates from WGS84:

  - `function WGS84ToProjection(const Lat,Lon:double; out Y,X :double) :boolean`

Calculating magnetic declination

- ▶ Magnetic declination can be calculated directly in Field-Map script

- ▶ Based on IGRF data (up to year 2024)

- ▶ Input is date, latitude and logintude (in WGS84)

- ▶ `function CalcMagneticDeclination_deg(const Lat_deg,Lon_deg :double; Date :variant) :variant`

Thank you for your attention