Python in Studio

Course Description

Audience
This course addresses developers who need to know all that is possible to do using Studio's Python API.

Prerequisites
The courses "PRT I" and "Studio GUI Configuration".

Duration
3 days

Course goals
This course gives you a deep understanding on how to change the graphical user interface of Studio. You will become familiar with the entire Python API provided by Studio. After completing the course you can for example:

- create new powerful commands
- register functions to be called based on Studio events
- create dynamic menus
- let Studio execute a script at start up
- define advanced Studio callbacks for interactive PRT reports.

Course topics

- Introduction
  - the Python engine in Studio
  - Studio commands
  - undo handling
- Python Modules In CARMSYS
  - Introduction
  - basic data types
  - Errlog.py, Cps.py, Crs.py, Localization.py, Names.py
- Rave's Python API in Python scripts
  - CuiContextLocator.py
- Cui.py
  - Variable.py
  - planning functions
  - wrappers
  - iterate over planning objects
- Drag-and-drop

    - carmensystems.studio.manipulate.py
    - carmensystems.studio.gui.py
- Gui.py
    - simple pop-up windows
    - dynamic menus
    - event handling
- MenuStates.py
    - disabling or enabling menu entries based on any definition
- Csl.py – Carmen Script Language
    - access CSL from Python
    - access Python from Csl
- Cfh.py – Carmen Form Handler
    - create your own forms
- Date handling
    - Dates.py
- Macro Recorder
    - use macros as building blocks in your scripts
    - generic bypassing
- Let Studio execute a script at start up
- Asynchronous call backs
    - create call backs from PRT reports
- External tables
    - carmensystems.mave.etab.py
- Airport.py – access data in the Airport manager

During the course you will see and work with a lot of real life and best practice examples.

In all examples and exercises a file based Crew Rostering/Pairing system with a generic rule set, flight data from OAG and faked crew data is used.