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# **INTO-CPS Desktop Application**

*Release 4.0.0*

**Sep 09, 2020**



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Welcome to the INTO-CPS Desktop Application documentation. The best way to get started is to follow the *First Steps* guide which guides you through the installation process and the basics of the application.



For a guide on how to use the various features of the application *User Interface* provides an overview of how to access the most important functionality.

**Note:** The INTO-CPS Toolchain refers to a collection of programs not limited to the the desktop application. For an comprehensive overview of all tools take a look at the [INTO-CPS toolchain documentation](#)



The following sections guides you through the process of installing the application, installing its dependencies and finally demonstrates how a co-simulation can be configured and executed within the application.

## 1.1 Install the application

There are two options for installing the application. The recommended approach is to download the latest *Release Build*, which is may lack bleeding edge features, but is typically much more stable. The alternative, is building the latest *Development Build* from source, which gives access to the most recently added features, but at a potential cost of stability.

### 1.1.1 Release Build

The latest release of the application for Windows, Linux, and macOS can be found on [GitHub Releases](#). Download and extract the zip archive corresponding to your host architecture. The extracted directory should look similar to this:

|                                  |                      |                       |           |
|----------------------------------|----------------------|-----------------------|-----------|
| locales                          | 4/17/2020 9:19 AM    | File folder           |           |
| resources                        | 4/17/2020 9:19 AM    | File folder           |           |
| swiftshader                      | 4/17/2020 9:19 AM    | File folder           |           |
| chrome_100_percent.pak           | 12/20/2018 1:16 PM   | PAK File              | 164 KB    |
| chrome_200_percent.pak           | 12/20/2018 1:16 PM   | PAK File              | 244 KB    |
| d3dcompiler_47.dll               | 4/20/2018 7:29 AM    | Application extens... | 4,245 KB  |
| ffmpeg.dll                       | 12/20/2018 1:15 PM   | Application extens... | 2,077 KB  |
| icudtl.dat                       | 12/20/2018 1:03 PM   | DAT File              | 9,979 KB  |
| into-cps-app-4.0.0.exe           | 4/17/2020 9:19 AM    | Application           | 91,589 KB |
| libEGL.dll                       | 12/20/2018 1:14 PM   | Application extens... | 107 KB    |
| libGLESv2.dll                    | 12/20/2018 1:14 PM   | Application extens... | 4,984 KB  |
| LICENSE                          | 12/20/2018 12:43 ... | File                  | 2 KB      |
| LICENSES.chromium.html           | 12/20/2018 1:08 PM   | Firefox HTML Doc...   | 1,948 KB  |
| natives_blob.bin                 | 12/20/2018 1:22 PM   | BIN File              | 123 KB    |
| osmesa.dll                       | 12/20/2018 1:13 PM   | Application extens... | 2,881 KB  |
| resources.pak                    | 12/20/2018 1:16 PM   | PAK File              | 8,517 KB  |
| snapshot_blob.bin                | 12/20/2018 1:29 PM   | BIN File              | 628 KB    |
| v8_context_snapshot.bin          | 12/20/2018 1:29 PM   | BIN File              | 1,017 KB  |
| version                          | 12/20/2018 12:43 ... | File                  | 1 KB      |
| VkICD_mock_icd.dll               | 12/20/2018 1:10 PM   | Application extens... | 339 KB    |
| VkLayer_core_validation.dll      | 12/20/2018 1:14 PM   | Application extens... | 3,190 KB  |
| VkLayer_object_tracker.dll       | 12/20/2018 1:13 PM   | Application extens... | 2,179 KB  |
| VkLayer_parameter_validation.dll | 12/20/2018 1:13 PM   | Application extens... | 2,790 KB  |
| VkLayer_threading.dll            | 12/20/2018 1:14 PM   | Application extens... | 2,077 KB  |
| VkLayer_unique_objects.dll       | 12/20/2018 1:13 PM   | Application extens... | 2,096 KB  |

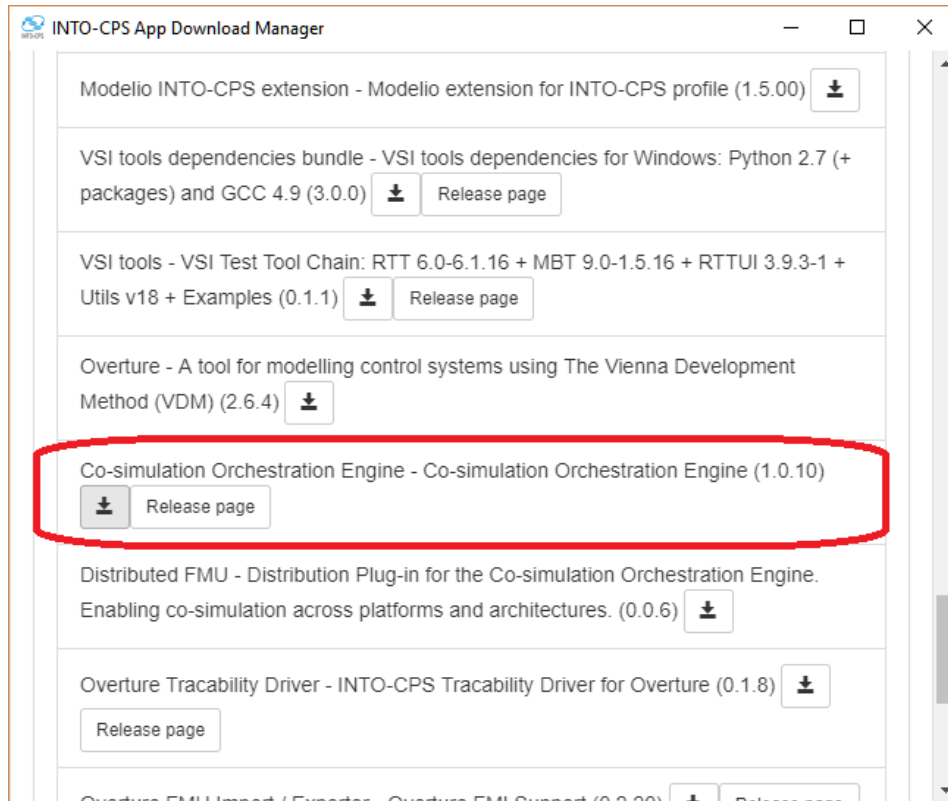
### 1.1.2 Development Build

1. clone the repository: `git clone https://github.com/INTO-CPS-Association/into-cps-application/tree/development`
2. change working directory to repository: `cd into-cps-application`
3. install node dependencies: `npm install`
4. install other resources: `gulp init`
5. build ui: `gulp`
6. run the test: `npm test`

## 1.2 Installing toolchain dependencies

The application is modular by design, as such it relies on external programs to support its features. The easiest way to install these is using the built in download manager.





1. Start the application by executing the program `into-cps-app-x.x.x`
2. Press the “Window.Show Download Manager” tab, a window will appear
3. Select the latest version of the toolchain
4. Select and download “Co-simulation Orchestration Engine - Co-simulation”

**Note:** This guide only installs the dependency necessary to perform co-simulations inside the application. To access other features it may be necessary to install additional programs.

## 1.3 Performing a Co-Simulation

**Warning:** Missing! Here we should explain how to run, say the water tank example.



The INTO-CPS Application is the front-end of the INTO-CPS tool chain. The following screenshot shows how it looks.

**Warning:** Here we should explain in simple terms how to use the application. Important concepts such as multimodel-config and co-simulation configuration should be explained!

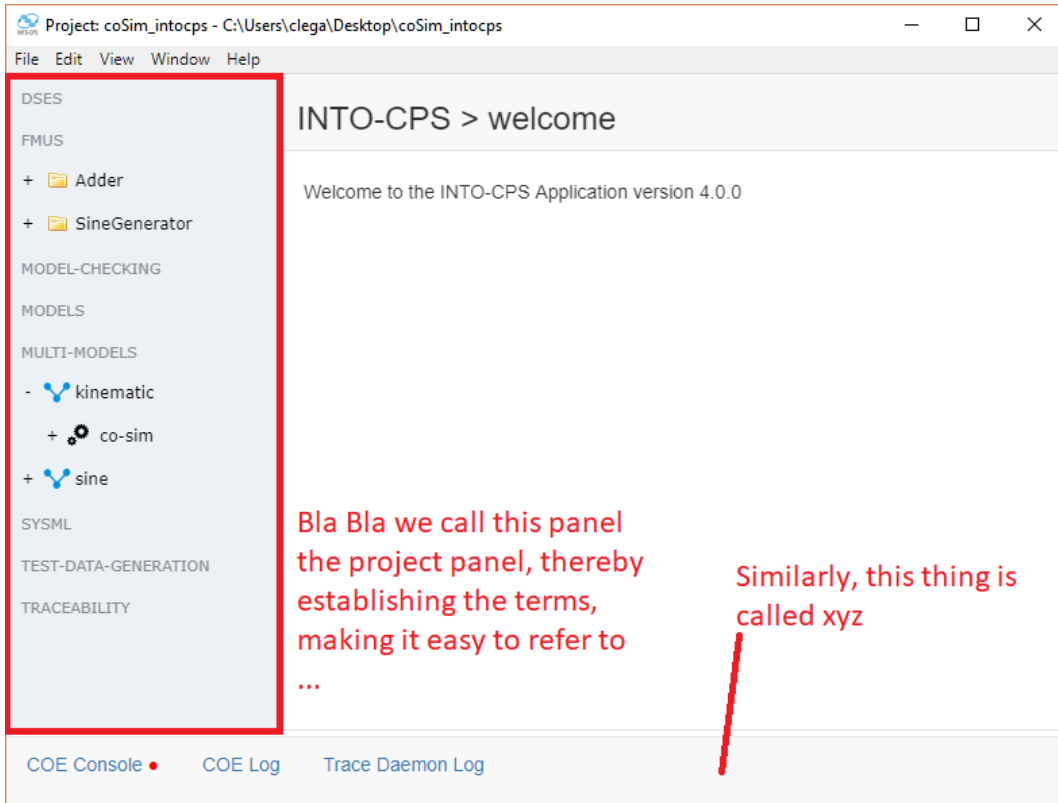
Additionally, a video demonstration would go a long way

Also we need need to consider what we are trying to convey. For example what information does the old docs convey:

```
The app is composed of 2 primary views: On the left, the project browser left is
↳always visible. It shows the various components of an INTO-CPS project. These
↳components can be clicked to trigger various actions.
In the center, the main view is shown. The contents of this view depend on which
↳action has been triggered in the project browser. A few example views are shown
↳below.
```

## 2.1 Overview

The app is composed of 2 primary views: On the left, the project browser left is always visible. It shows the various components of an INTO-CPS project. These components can be clicked to trigger various actions. In the center, the main view is shown. The contents of this view depend on which action has been triggered in the project browser. A few example views are shown below.



## 2.2 Important Functionality

**Warning:** here we should describe how to use the various components of the application

### 2.2.1 Download Manager

### 2.2.2 Example Projects

### 2.2.3 Plotting

### 2.2.4 Design-Space Exploration

The application is built in a modular fashion that allows extra functionality to be accessed from within the application by installing external tools. Typically, these are installed using the *Download Manager*, however there are some cases where a plugin must be installed manually.

Below is an overview of the different integrations in terms of the functionality they provide and how to install them.

### 3.1 Modelio

Modelio is a combined UML/BPMN modeler supporting a wide range of models and diagrams.

**Warning:** integrate [this](#)



## 4.1 Simulating the Water Tank Example





## CHAPTER 5

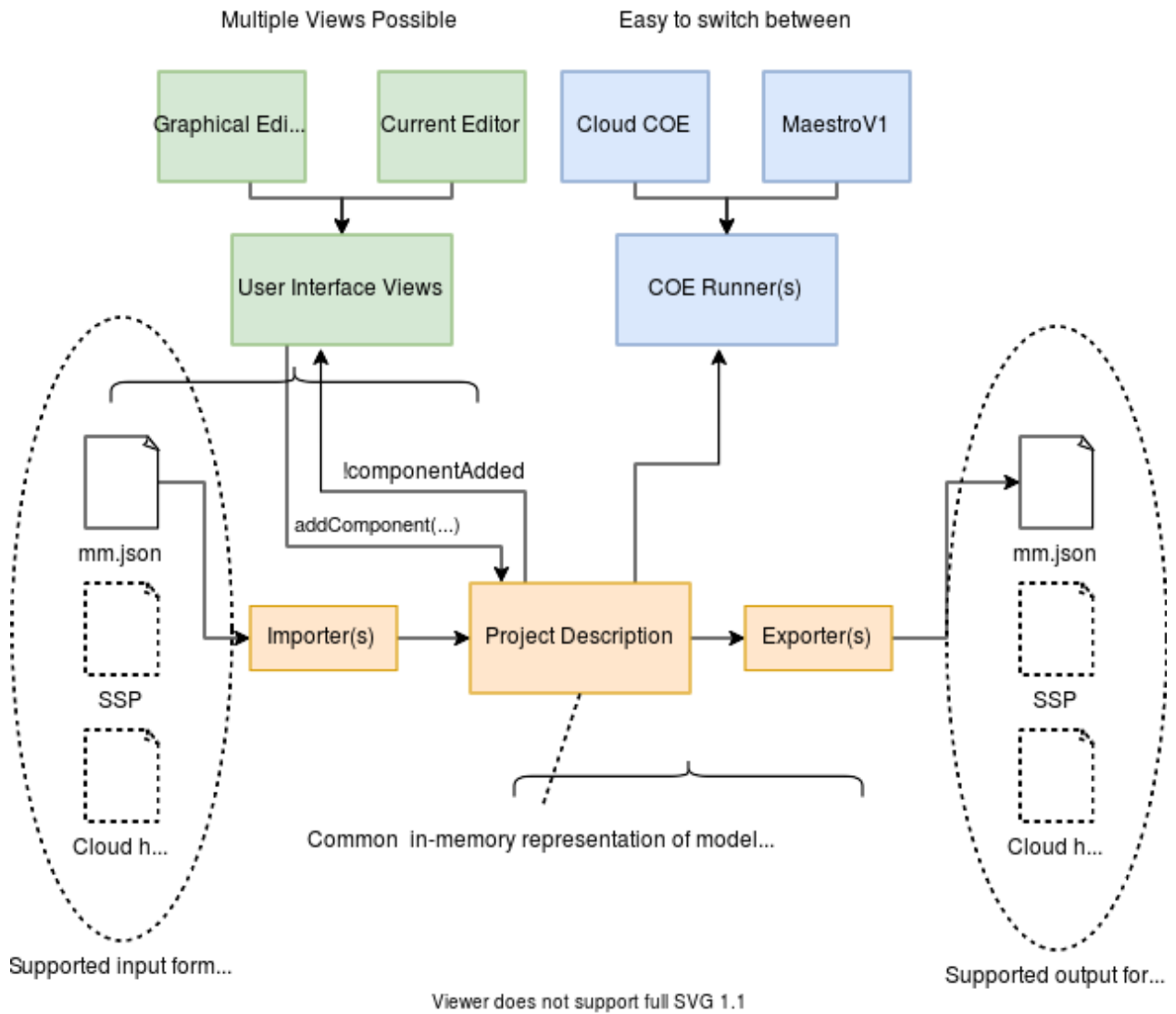
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### Developer Documentation

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This section of the documentation provides relevant information to maintainers and contributors of the project.

## 5.1 Overview



test