

# openPASS AC Munich - 04.07.2019

Dienstag, 9. Juli 2019 07:06

**Meeting date:** 04.07.2019 09:30

**Location:** Petuelring 130, 80788 Munich

## Participants

-  [Das Arun](#) (BMW)
-  [Platzer Thomas](#) (BMW)
-  [Fix Dmitri](#) (ITK)
-  [Gnandt Christian](#) (Tüv Süd)
-  [Schoenawa Stefan](#) (VW, on behalf of VW GoA)
-  [Schmidt Daniel](#) (Bosch)
-  [Lewerenz Per](#) (Daimler)
-  [Hammouda Manel](#) (BMW)
-  [Stark Lukas](#) (VW, on behalf of VW GoA)
-  [Paris Rene](#) (intech, on behalf of BMW)
-  [Biegel Reinhard](#) (intech, on behalf of BMW)
-  [Rimanoczy Szabolcs](#) (intech, on behalf of BMW)
-  [Duong Quang Tuan](#) (Tüv Süd)
-  [Gottwald Fabian](#) (EDAG, on behalf of VW GoA)
-  [Mai Marcus](#) (TUD, on behalf of Daimler)
-  [Blenz Konstantin](#) (TUD, on behalf of Daimler)
-  [Siebke Christian](#) (TUD, on behalf of Daimler)

## Notes

### 1) Pull Request by BMW:

- Presentation of pull request content for enabling scenario based simulation (see presentation overview pull request for scenario based simulation)
- Signalflow from AppConfig could be displayed in system editor in future.
- Exchange of modules in AppConfig is possible. However the modules communicate via special signal structs that have to be respected.
- An overview of modules for the pull request can be found in the presentation slides.
- Dmitri: Exchange of DynamicsRegularDriving with the more detailed DynamicsTwoTrack could be worth a try.
- AgentInterface and WorldInterface need to be harmonized across the different use cases in upcoming releases (see collection of topics for the next releases).
- Sensor\_RecordState writes out the data from previous time step (delay from signal transmission) -> Check if the according time stamp is correct
- The VCU component uses the EventBridge to get events from the core
- Naming of VCU: Rename to indicate that the interface is for event forwarding and modeling the interaction of different FAS / drivers. The module can be used for manipulation of behavior through the scenario file. Dmitri: other options to manipulate are available and should be discussed.
- Presentation of Configs (see presentation configuration files for scenario based simulation)

### 2) GUI pull request by VW (see presentation GUI features for Release 0.6):

- New GUI features (hierarchical system editor, experiment setup for scenario based simulation) were presented.

- AlgorithmAgentFollowingDriverModel now also uses a Sensor to get data from the agent interface. It has to be checked if according adaptations to the GUI have to be made (Default instantiation for the Sensor is done in the slave anyways).
- The GUI already has a mechanism to check if probabilities sum up to 1. This will be implemented throughout the configuration process where necessary.
- A new GUI Plugin "ProfilesEditor" could be used to create and configure profiles. This will be evaluated during the further development of the GUI.
- Project directory structure: place \*.dll and \*.xml for all components in the folder components. This way, users would know that the dll and the xml belong together. The Slave would have to get libs from this folder (instead of getting everything from folder libs).

3) AC Chair election:

- BMW Group (Arun Das) was unanimously elected as AC chair .

4) Driver behavior model (TUD on behalf of Daimler) (see presentation modular driver architecture):

- A standardized interface (with staticEnvironment, Ego, SurroundingMovingObjects) should be generic to use with driver behavior models as well as other functions.

5) Review process for pull requests:

Automated tests on the CI are the minimum requirement for pull request.

The minimal test coverage has to be defined and checked by the CI.

Coding rules need to be check automatically.

Incremental introduction of automated checks (e.g. the documentation has to be complete for changed / new classes only)

Interfaces need to be tested extensively without exceptions.

License headers should be automatically checked by the CI.

Pull requests should be kept small and contain only self-contained features or sub-features.

The discussed topics show the importance of defining quality standards and checking them. The establishment of a quality committee will therefore be discussed in upcoming meetings (an alternative could be task force meetings to define the quality standards for now).

Review process:

Reviewers will already be determined when assigning a story to the next release. Changes should be review by the PM and at least one additional person. Reviews are done via Gerrit. A process for unplanned or pull requests from outside the working group has to be defined.

Tasks of the reviewers:

Constructive criticism to resolve internal dependencies.

Check fulfillment of requirements from the user story.

Next Steps:

Define Coding Rules (e.g. in task force).

Discuss if pull requests should also be visible to / reviewed by external users.

6) Jenkins:

- A Jenkins instance is now available for the sim@openpass project.
- Jenkins Jobs need to be set up soon.
- ThirdPartyLibraries: Third party dependencies have to be incorporated in the build job. (E.g. OSI: Is a Git-link to the OSI repository possible? -> Will be discussed with Eclipse)

7) Collection of topics for the next releases:

Refactoring:

- Observer has limited capabilities for writing the output (see presentation observation and logging concept). Idea: Use Publish/Subscribe Pattern (Concept needs to be detailed still)
- Restrictions should be enforced to only let Observers subscribe to the Broker to prevent misuse (Components cannot be consumers of broker, Core module can be consumer).
- Extension to events: there are two types of information that is to be published: Signals to be logged from core module (can be published from core module but not subscribed from component modules), Events (can be published and subscribed from core and component modules) -> Broker is used for observations and for event handling
- Check and reduce interfaces: Do we need all interfaces? Check interface definitions. (AgentInterface, WorldInterface, CallbackInterface, ObservationInterface, etc.)
- Consolidate PCM use case and scenario based simulation.
- Basic Use Case can be marked as deprecated.
- Set up CI (see above).
- Structure of modules and clustering in 3 types (Sensor, Algorithm, Dynamics) should be reviewed.
- Revision of the directory structure (src, include, lib). This could solve the problem with long directory paths on Windows.
- Introduce naming conventions (Collect ideas in a central list, Discuss in AC)

#### New features:

- Visualization (Daimler, ITK): GUI Preview (see Presentation preview GUI analysis plugin)
  - Plot from csv with up to 2 y-axis. Data is currently in highD format.
    - Possible feature extension: Choose x-axis from data
    - It has to be checked if the current output can be written out as csv.
  - Statistics in histogram, plots are determined from data header.
  - Commit of visualization could be done already for Release 0.6.
- Output: Write out the simulation output in xml (Run statistics) and csv (Traces). Each run in separate csv? Cdata could be an alternative.
- Try usage of DynamicsTwoTrack instead of DynamicsRegularDriving (POC)
- Simulation core can interpret subsystems to comply with GUI (GUI feature will not be committed for Release 0.6)
- Integration of sumo models is currently done. This will not be committed for Release 0.6 (Daimler).
- Extension to handle intersections.
- GUI: Subsystems in System Editor.
- GUI: Enable complete agent configuration.
- GUI: Dynamic parametrization through statistic distributions.
- GUI: Define global parameters for use in multiple components.
- GUI: Component generator: Create components in GUI plugin.

#### 8) Next steps:

- Xml Workshop: After release 0.6, there will be a workshop for discussion of configuration files.
- Development of generic approach for unified agent configuration (systemConfig, profile based approach).
- Visualization of simulation results.
- Create stories in Tuleap from TUD presentation.
- Collect requirements for release 1.0 and create roadmap.
- Presentation on scheduler will be shown in next AC meeting.
- Next in person meeting will be after the review of the pull request to discuss the contents.