

# OPENPASS ARCHITECTURE COMMITTEE MEETING

28.02.2018



# AGENDA

- 1. AC distribution list**
- 2. Summary discussion with VW GoA**
- 3. Proposal systemConfig integration**
- 4. Release planning / discussion**



# AC DISTRIBUTION LIST

# ARCHITECTURE COMMITTEE DISTRIBUTION LIST

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# SUMMARY DISCUSSION WITH VW GOA

# REQUIREMENTS SIM@OPENPASS

## General:

- openPASS should enable the **modularity**, so that users can set-up and/or exchange components (--> systemConfig)
- Manipulation of signals (Sensor - ADAS)
- Modular architecture of ADAS

## GUI

- Experiment configurator
- Hierarchical system editor

# GUI EXPERIMENT SETUP

## New GUI Plugins

### - **Traffic simulation:**

- General experiment settings, e.g. simulation duration, invocations etc.
- Environment configuration, e.g. weather, visibility distance etc.
- Scenario configuration using openScenario (link to \*.xocs file).
- Traffic configuration, e.g. traffic density, platoon rates, agent profile probabilities etc.

### - **Agent configuration:**

- Driver configuration (depends on available driver models).
- Vehicle configuration, e.g. vehicle type, sensors, adas etc.

→ **Enable stochastic**

## Experiment Setup

Start

Simulation duration [ms], int

30000

Number of invocations, int

10

Random seed, int

123456789

### Environment

### Scenario

# scenario agents 2

### Traffic

Traffic density 1200

Here you can find general information according to your experiment ...

Click on a component to see its configuration ...



# Agent Setup



Agent name

Middle Class Car Agent ▼

## Vehicle

Golf R ▼	60 %	=
BMW M140i ▼	40 %	=



## Sensor - ADAS - Setup

none	30 %	
/path/to/system.xml ▼	60 %	=
/path/to/sys3.xml ▼	10 %	=



## Driver

Ralph Schuhmacher ▼	90 %	=
Drunk driver ▼	10 %	=



- Algorithms
  - Algorithm\_Selector
  - Algorithm\_TrajectoryFollower
- Sensors
  - EgoSensor
  - Init\_Agent
  - Sensor\_Collision

By clicking on a connection, you can manipulate the signal

*Comment from the AC-meeting:  
Driver components are already included in the systemConfig.xml and therefore do not need to be specified separately*

PCM-Simulation

PCM-Evaluation

System

Traffic-Simulation

Agent-Configuration

## Driver Setup

Driver name  
Driver model

Drunk driver ▼

AlgoFollowingDriver ▼

Param1  
Param2  
Param3

10

true

1200

Algorithms  
Algorithm\_Selector  
Algorithm\_TrajectoryFollower

Sensors  
EgoSensor  
Init\_Agent  
Sensor\_Collision

### Systems

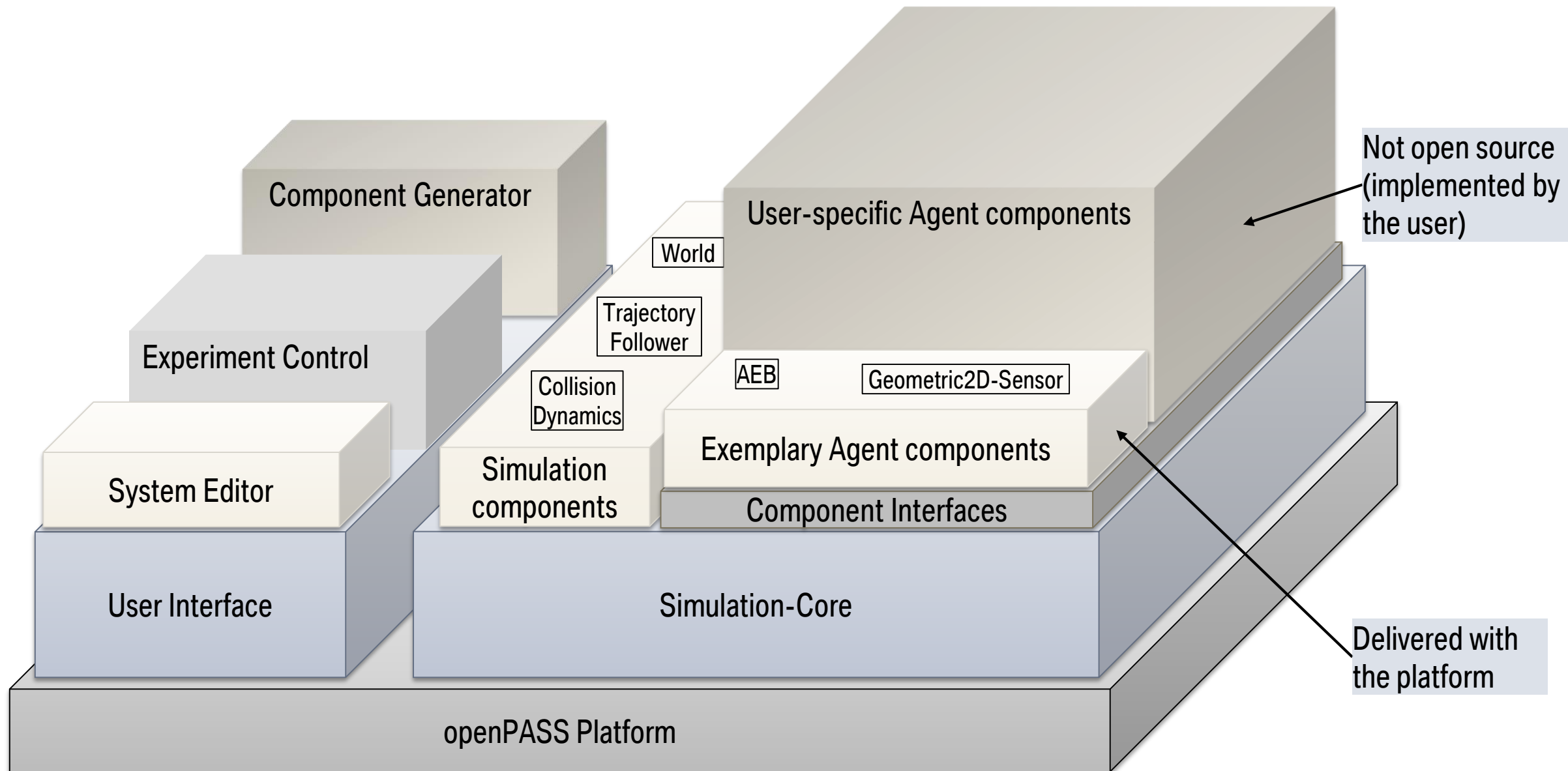
a connection,  
you can  
manipulate  
the signal

*Comment from the discussion:  
Parametrization of a Driver / ADAS /  
Sensor / etc. is only necessary if the  
approach with the appConfig.xml is used.  
Otherwise the parametrization is  
included in the systemConfig.xml.*

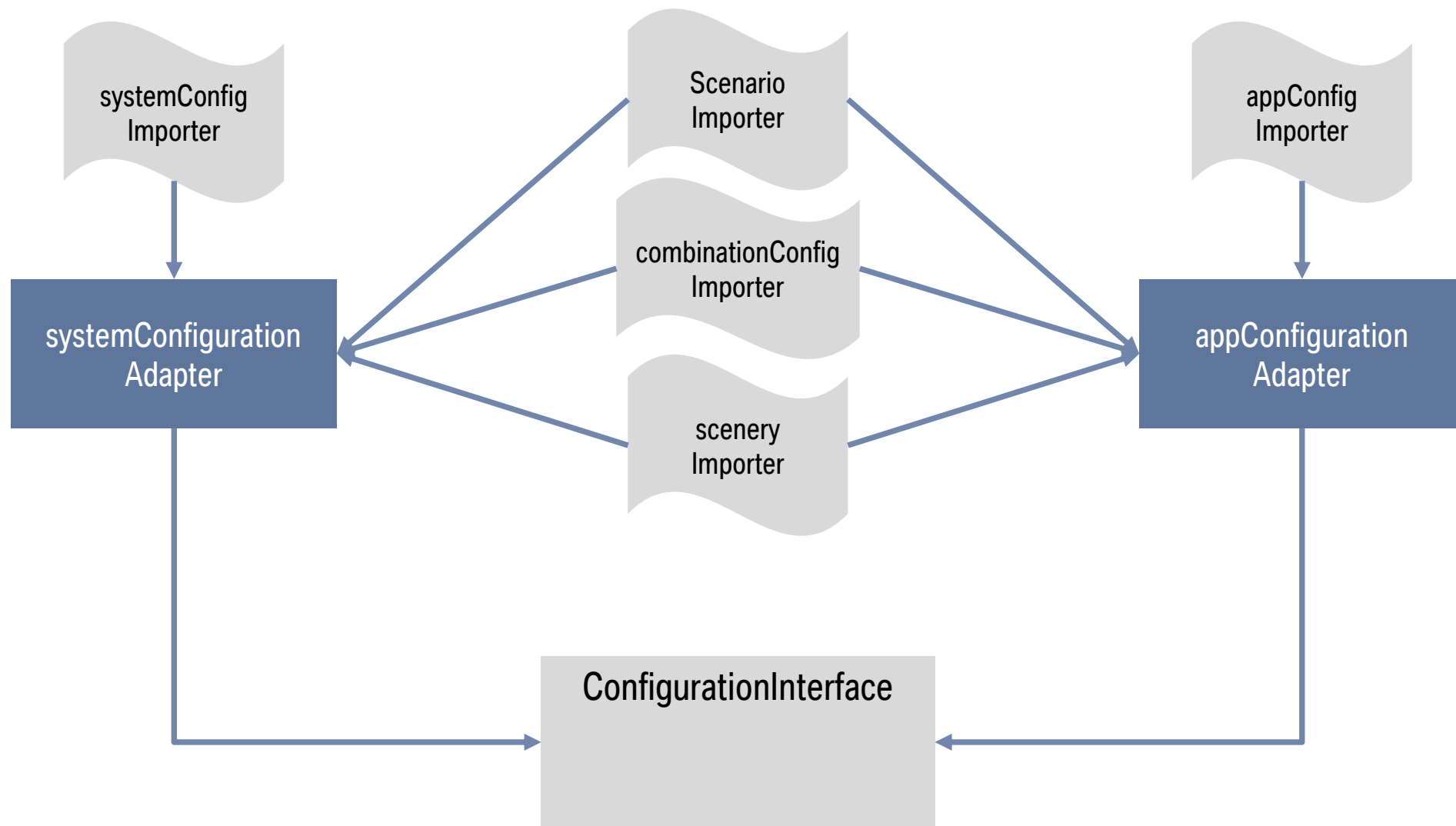


# PROPOSAL SYSTEMCONFIG INTEGRATION

# OPENPASS AS A PLATFORM



# CONFIGURATION OF AGENTS

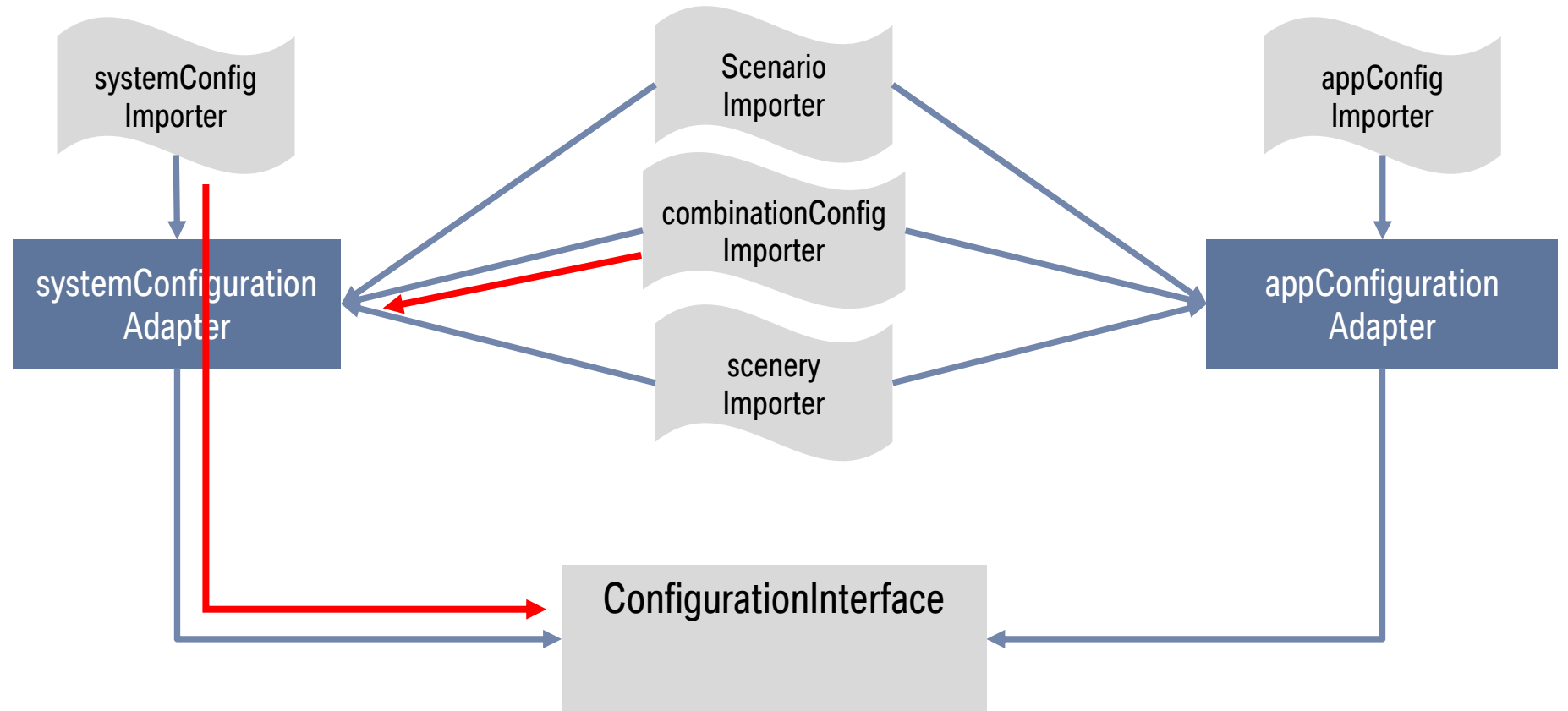


# CONFIGURATION OF AGENTS

## Example 1:

### Usage of systemConfig

- Free connections, modular setup, manipulation of signals
- CombinationConfig refers to a sytemConfig.xml as AgentProfile
- No usage of vehicle, driver, sensor or vehicleComponent Profiles

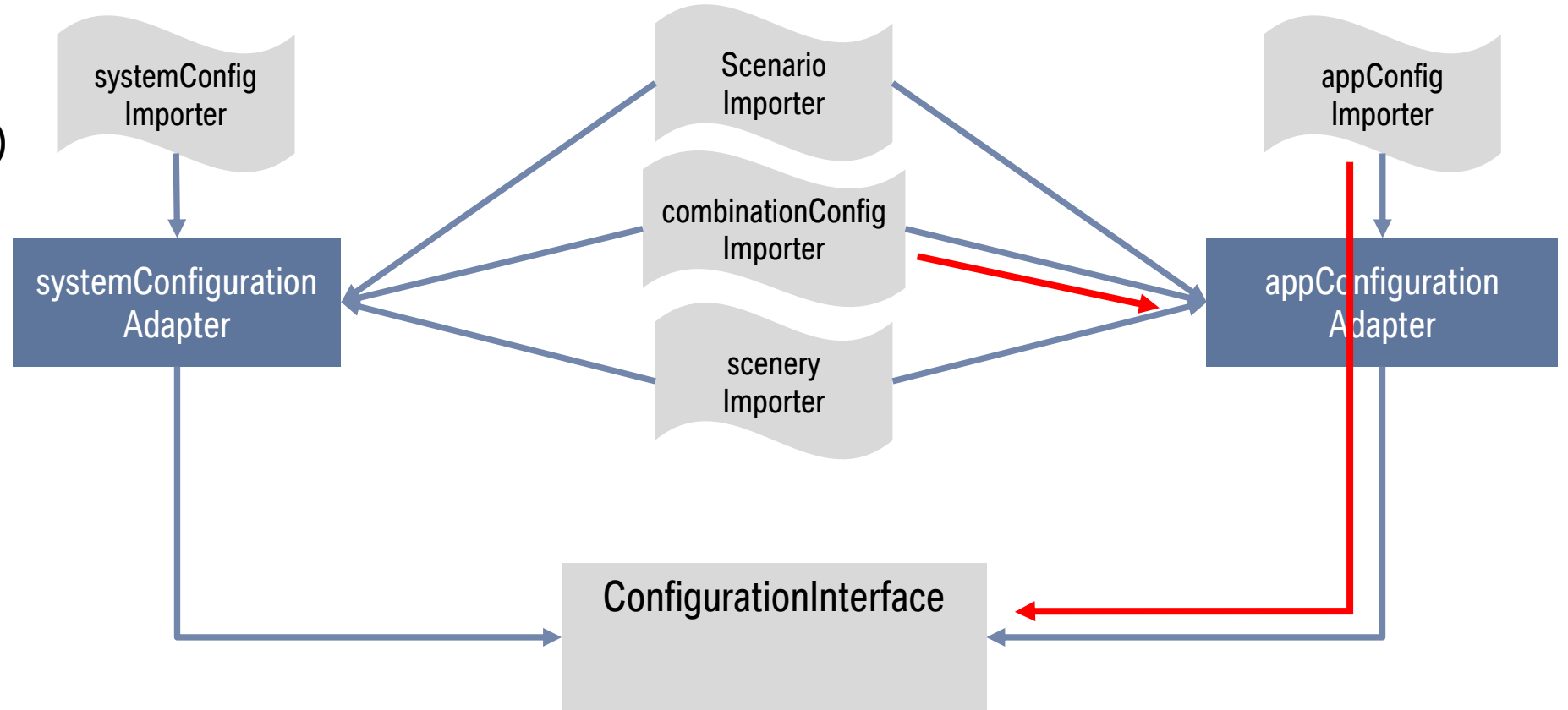


# CONFIGURATION OF AGENTS

Example 2:

Usage of AppConfig

- Probabilistic approach for agent modeling (ADAS, Driver, Sensors)
- CombinationConfig refers to agent, vehicle, driver, sensor and vehicleComponent Profiles
- AppConfig contains information for the necessary channels



# REQUIREMENTS SIM@OPENPASS

## **Xml input files**

- Definition of components, which should be moved to systemConfig
- Definition of components, which are not configurable by user
- Alignment on one set of input files
- Definition and refactoring (if required) of the structure of input files





# RELEASE PLANNING / DISCUSSION

# EPICS RELEASE 1.0

1. GUI hierarchical system editor
2. GUI experiment setup
3. Adjustment input files
4. sim@openPASS architecture
5. Scenario based simulation
6. ...

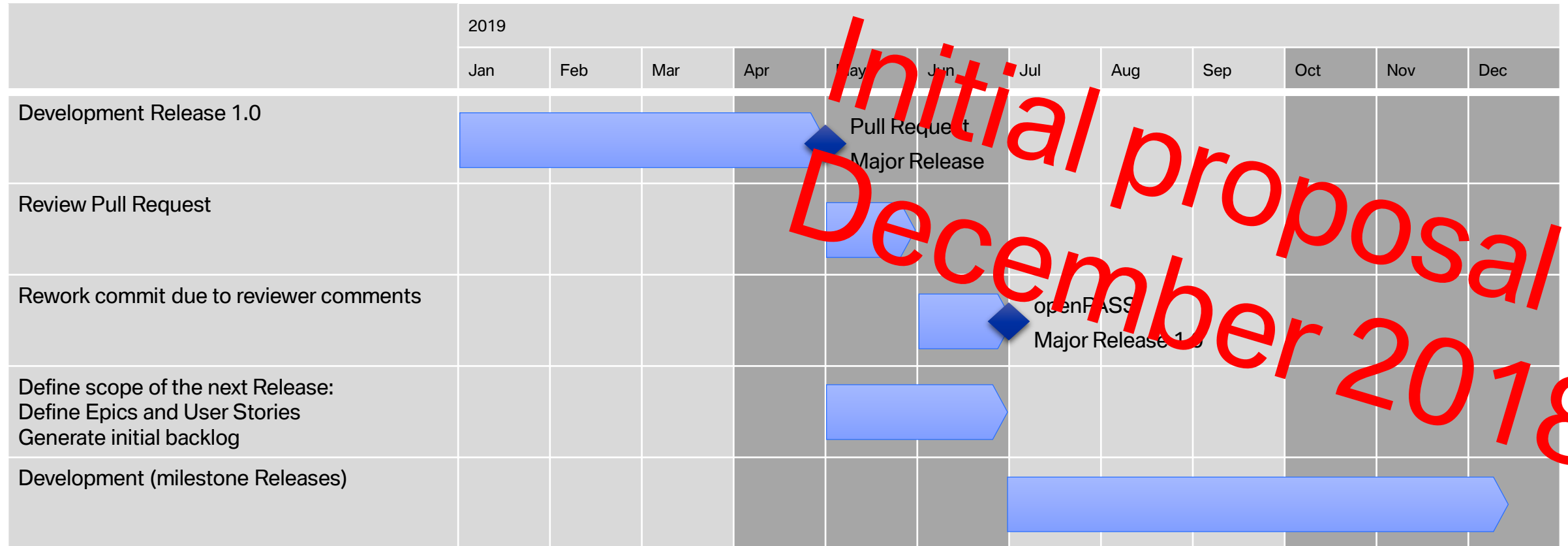
# USER STORIES

– [https://tuleap.eclipse.org/plugins/tracker/?group\\_id=114](https://tuleap.eclipse.org/plugins/tracker/?group_id=114)

## From the discussions in the AC-meeting:

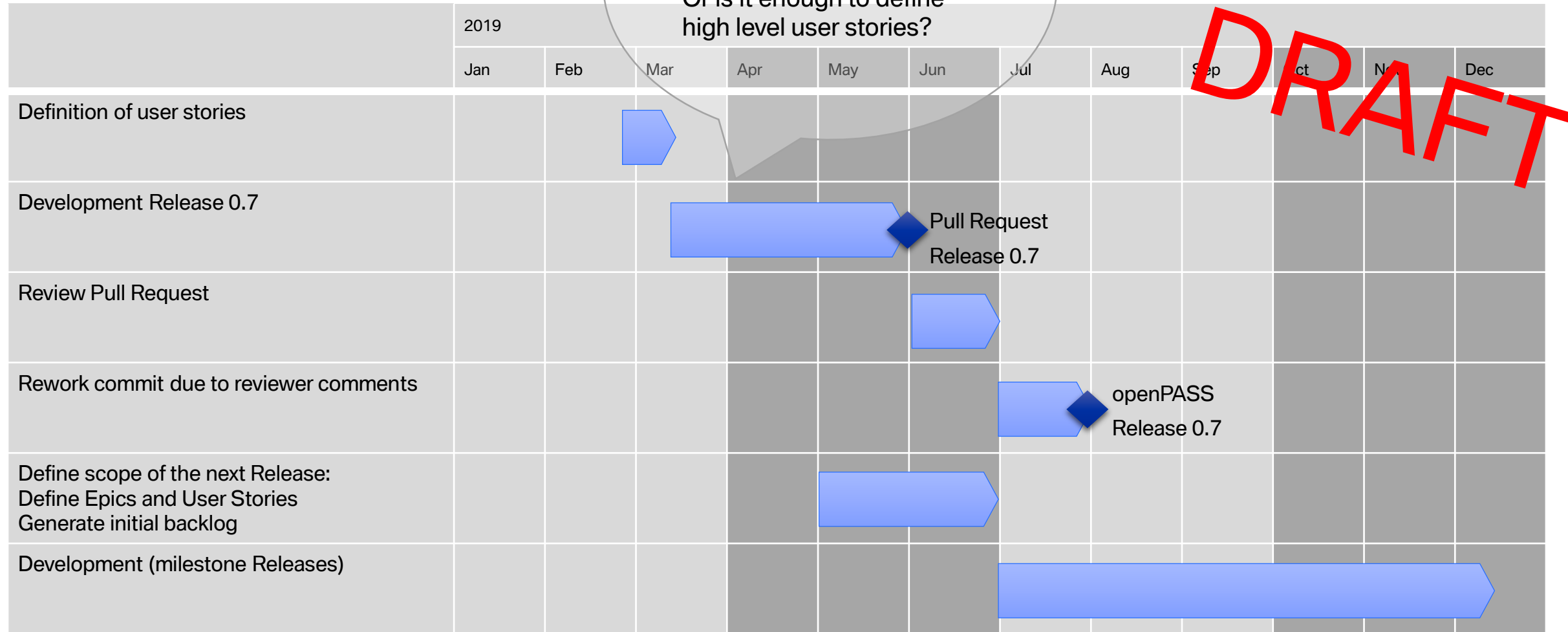
- For now we start using epics and user stories in Tuleap for the planning progress
- If a more fine-grained description is necessary we may also include tasks to break up user stories
- Current and future development should be based on user stories → everybody should contribute!

# MILESTONES



*Initial proposal  
December 2018*

# MILESTONES





**FURTHER TODOS**

# FURTHER TOPICS

- OSI: Sensor interface, ADAS - output/input format - should we stick to OSI standard?
- How do we handle channels/connections? Possibility to choose what to use?
- Installer
- EPL 2.0
- Coding guidelines (Tuleap DevTasks #757)
- Bugfixing process & tooling
- Upgrade auf C++ 17
- Upgrade Qt Version 5.12.2 (LTS? )