

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**

- openPASS
- PCM-Simulation
- PCM-Evaluation
- System
- Traffic-Simulation
- Agent-Configuration

New Experiment Load Experiment Save Experiment

Experiment Environment Scenario Traffic

Experiment Setup

Simulation duration [ms], int

Number of invocations, int

Random seed, int

Start

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 it's 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

PCM-Simulation

PCM-Evaluation

System

Traffic-Simulation

Agent-Configuration

Driver Setup

Driver name
Driver model

Drunk driver ▼

AlgoFollowingDriver ▼

Param1

10

Param2

true

Param3

1200

Algorithms

- Algorithm_Selector
- Algorithm_TrajectoryFollower

Sensors

- EgoSensor
- Init_Agent
- Sensor_Collision

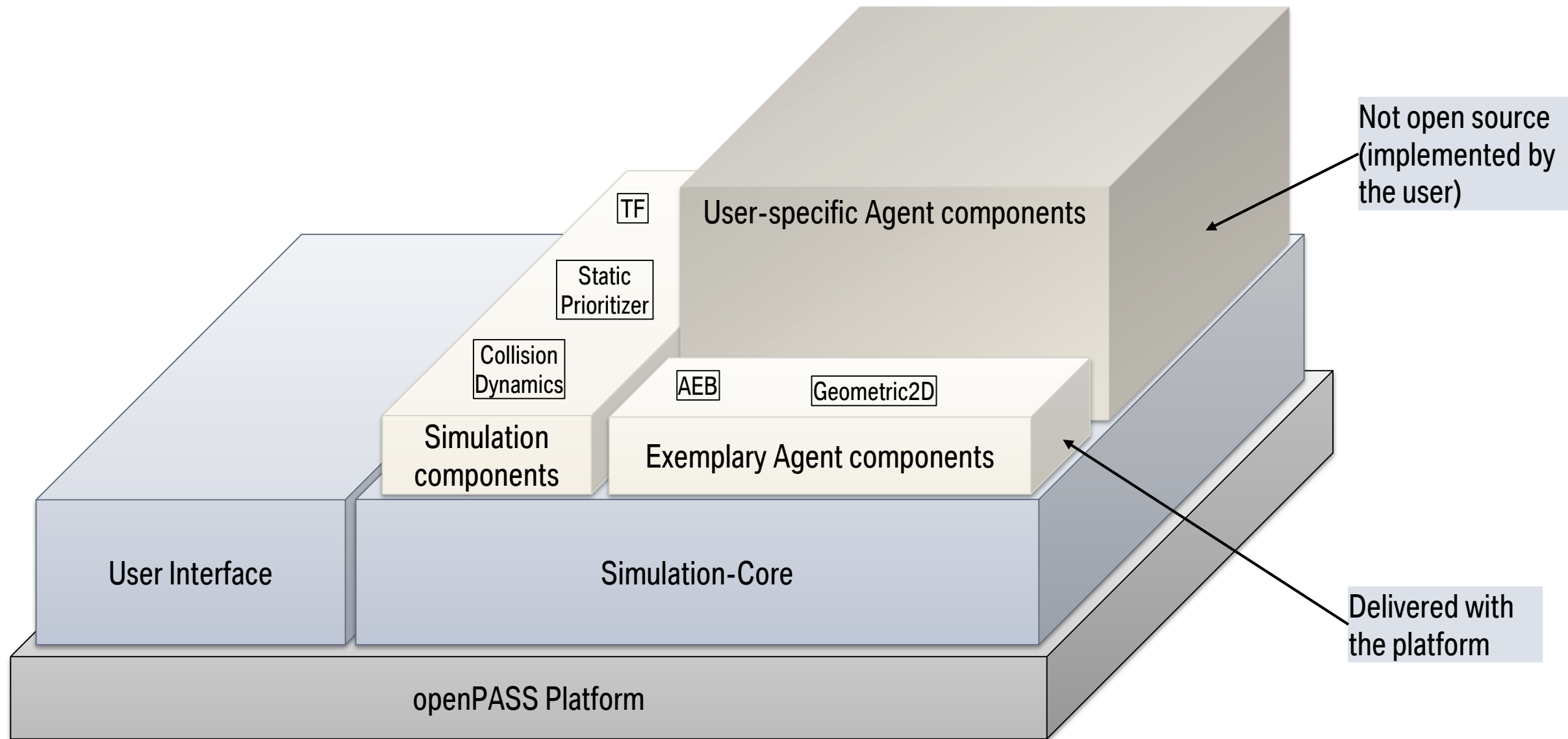
Systems

a connection,
you can
manipulate
the signal

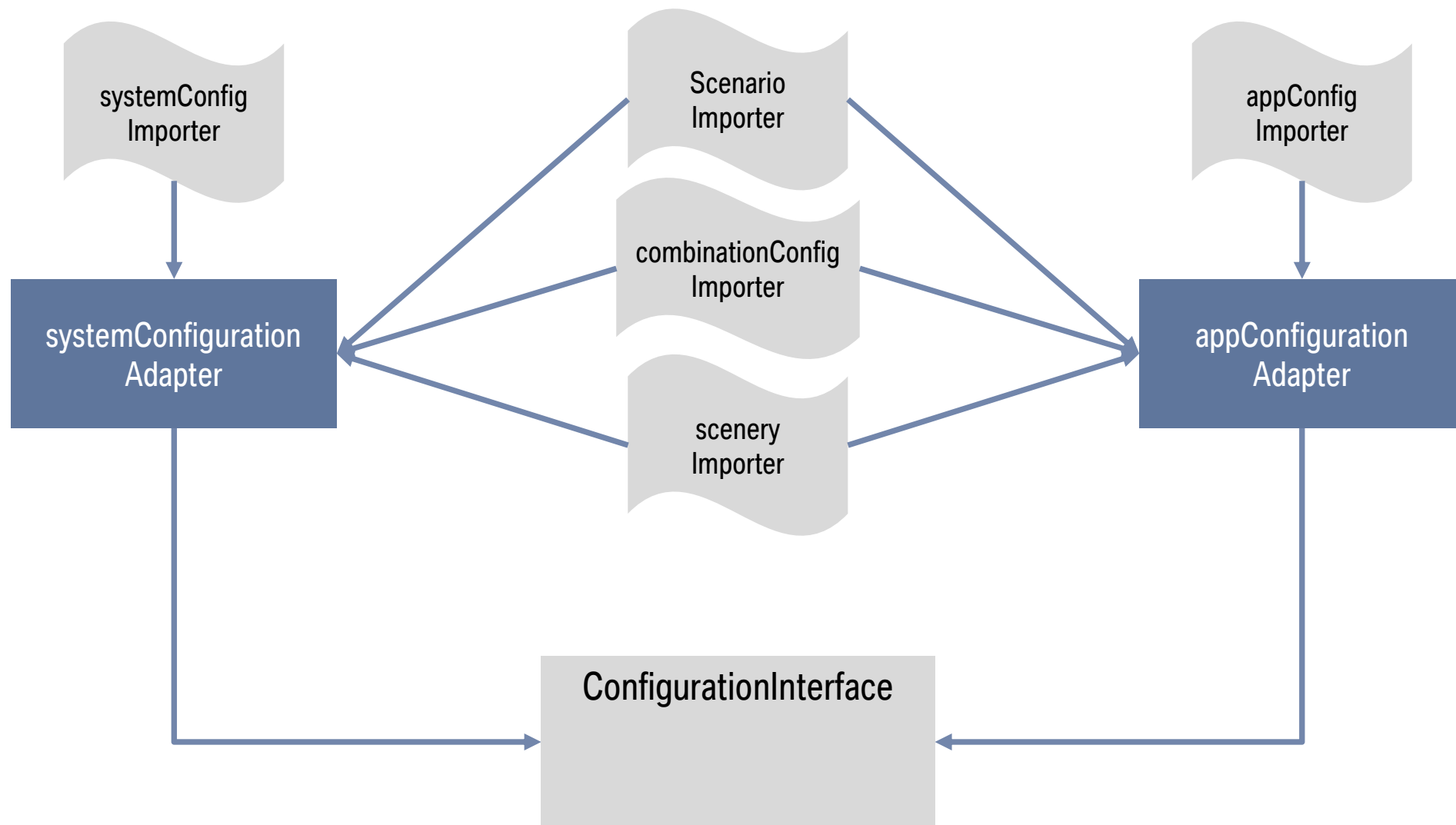


PROPOSAL SYSTEMCONFIG INTEGRATION

OPENPASS AS A PLATFORM



CONFIGURATION OF AGENTS

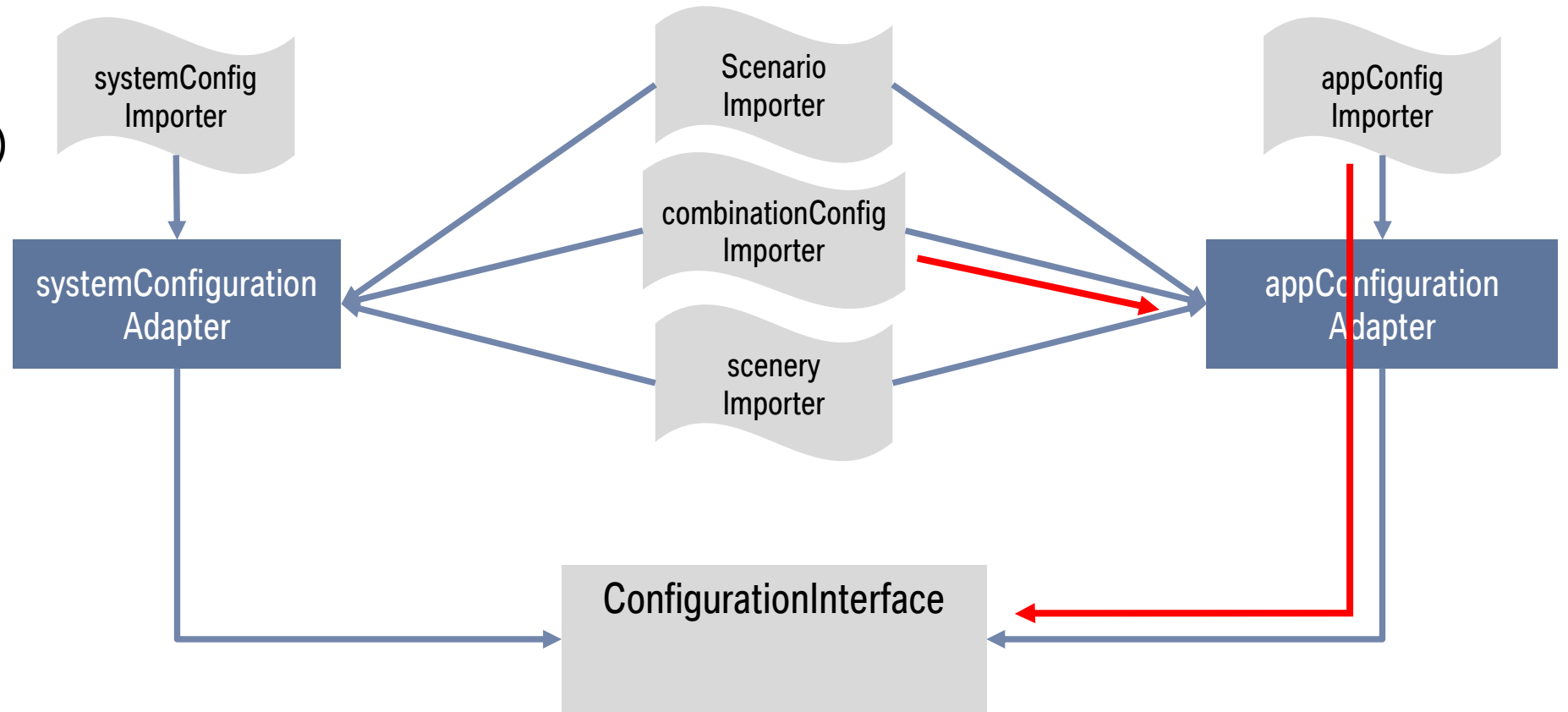


CONFIGURATION OF AGENTS

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

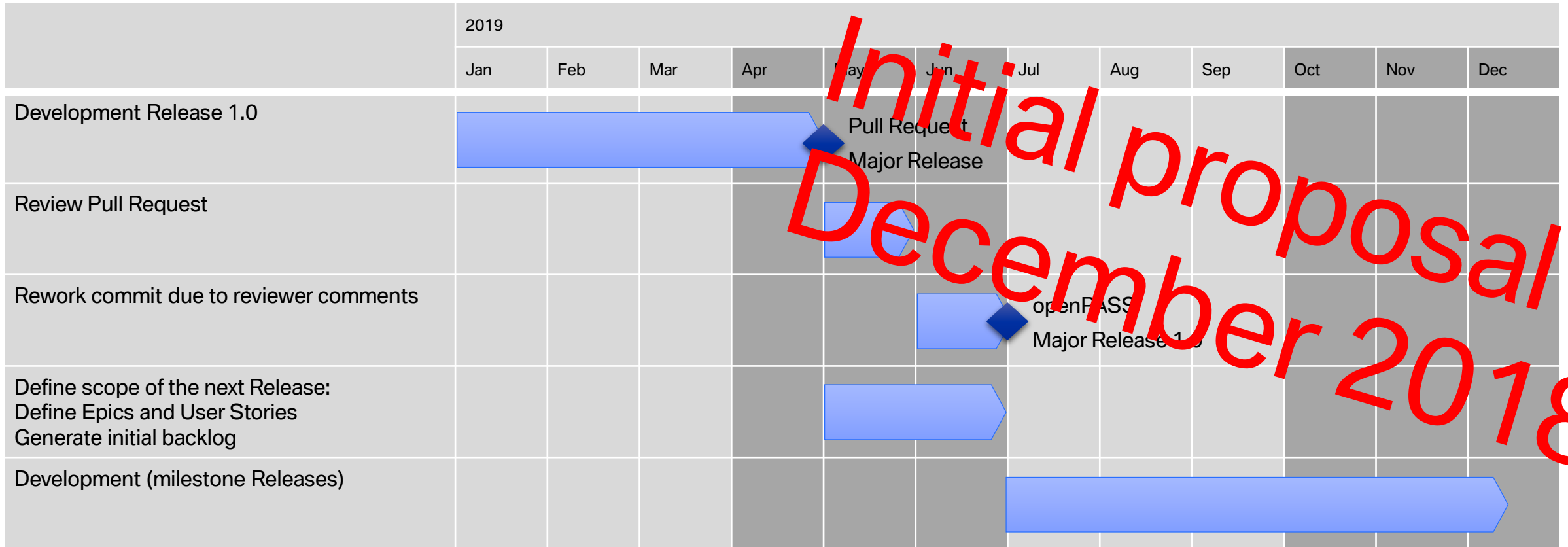
EPICS RELEASE 1.0

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

USER STORIES

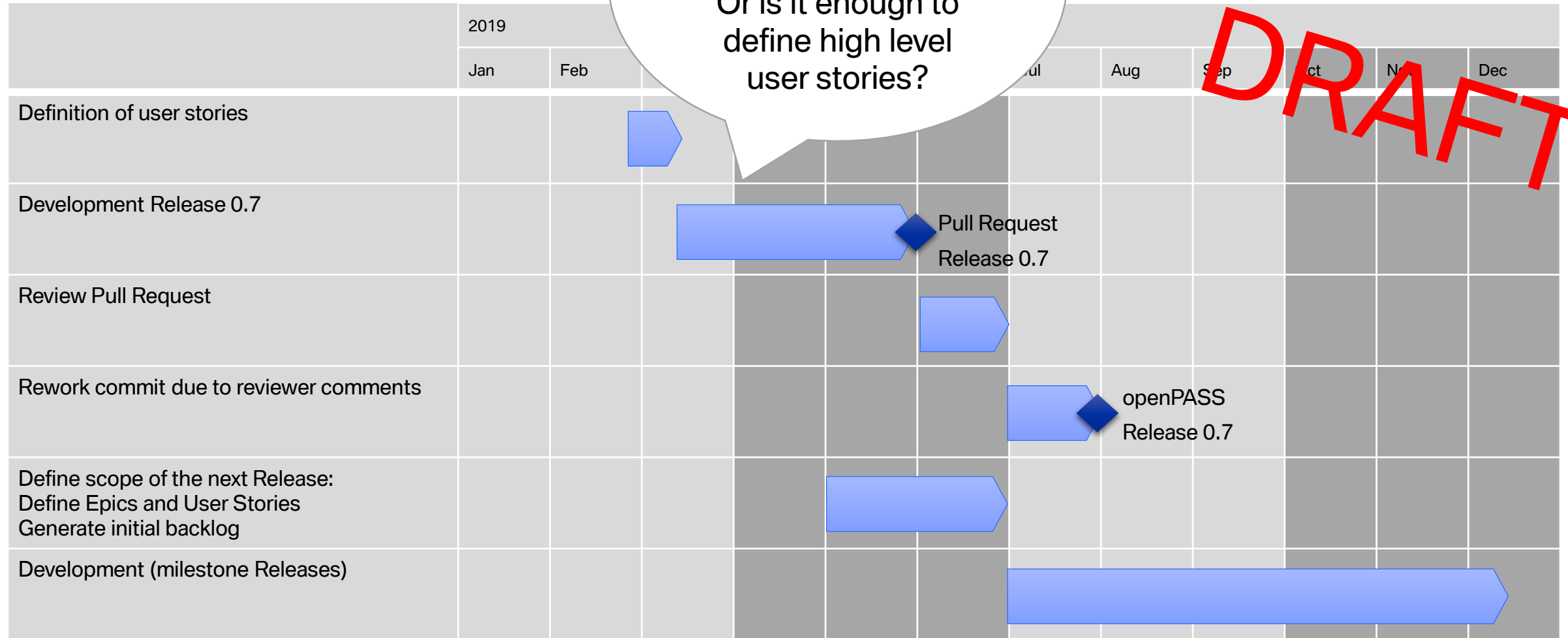
– See https://tuleap.eclipse.org/plugins/tracker/?group_id=114

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?)