Execution Flow
openPASS Release 0.6

22.10.2019 – René Paris, on behalf of BMW AG
Initialization Phase

Where are the files?

What do the files say?

Prepare everything for the next step

main

ParseArguments

ImportAllConfigurations

CTOR(ConfigurationContainer)

ConfigurationContainer

Import

SystemConfigImporter

SlaveConfigImporter

ProfilesImporter

ScenariiImporter

SceneryImporter

VehicleModelsImporter

SystemConfigImporter

FrameworkModuleContainer

EventDetectorNetwork

ManipulatorNetwork

ObservationNetwork

SpawnPointNetwork

AgentBlueprintProvider

AgentFactory

Sampler

Stochastics

World
Initialization Phase

**main**
- CTOR (ConfigurationContainer, FrameworkModuleContainer)
- ExecuteRun

**runInstantiator**
- Let's go
  - InitializeFrameworkModules (experimentConfig, scenario)
  - Init(...)

**FrameworkModuleContainer**
- Instantiation agnostic libraries initialized
- Instantiation dependent libraries (Re)initilized

**Scheduler**
- CTOR(FrameworkModuleContainer)
- Run(runResult)

InvocationControl::Progress

Finalize Cycle

How many instantiations in experiment?
• **Execution divided into:**
  - Bootstrap
  - Common
  - NonRecurring
  - Recurring
  - Finalize Recurring
  - Finalize

- One-time execution at start of simulation
- Processed at each timestep
- One-time execution after end condition is reached (i.e. simulation duration)
Bootstrap
  ObservationNetwork::UpdateTimeStep

Common
  SpawnControl::Execute
  std::vector<EventDetector>::Trigger()
  std::vector<Manipulator>::Trigger()
  ObservationNetwork::UpdateTimeStep
  ...

Intermission: Update Agent Phase
  Add Agent specific tasks for new agents = For each component register ::Trigger / ::Update
  Remove Agents leaving world
  Distinguish between once only (NonRecurring) and periodic (Recurring)
Common

...  
  Component1::Trigger()  
  Component2::Trigger() // same component priority as Component1  
  Component1::Update()  
  Component2::Update()  
  Component3::Trigger() // lower component priority as Component 1 & 2  
  Component3::Update()  

FinalizeRecurring

  World::SyncGlobalData()  

Finalize  

  std::vector<EventDetector>::Trigger()  
  std::vector<Manipulator>::Trigger()  
  ObservationNetwork::UpdateTimeStep()
RunTime Flow
Overview