

# RoDaFlow: A Framework for Development of Dataflow Network Agents in Smart- M3 with Substitution Method

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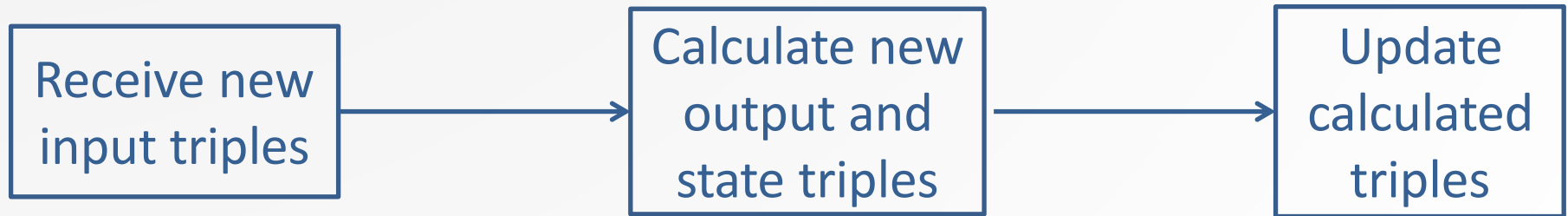


# Primary agent

## Initialization

1. join the smart space
2. insert description triples
3. insert protection for description, output and state triples
4. calculate and inserts initial output and state triples
5. subscribe to input triples

## Operation

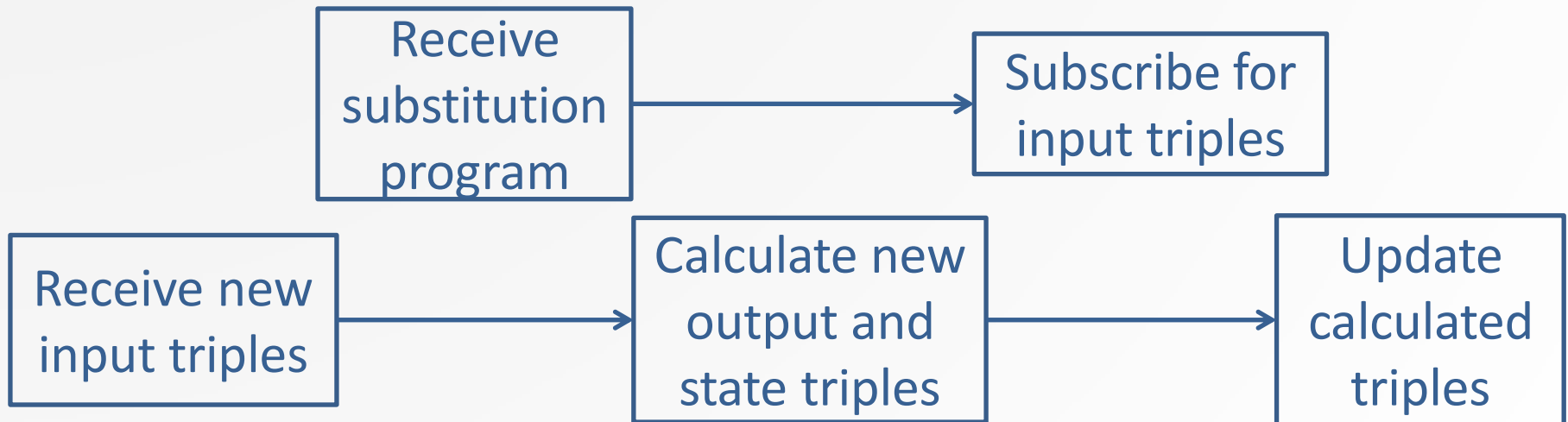


# Substitute agent

## Initialization

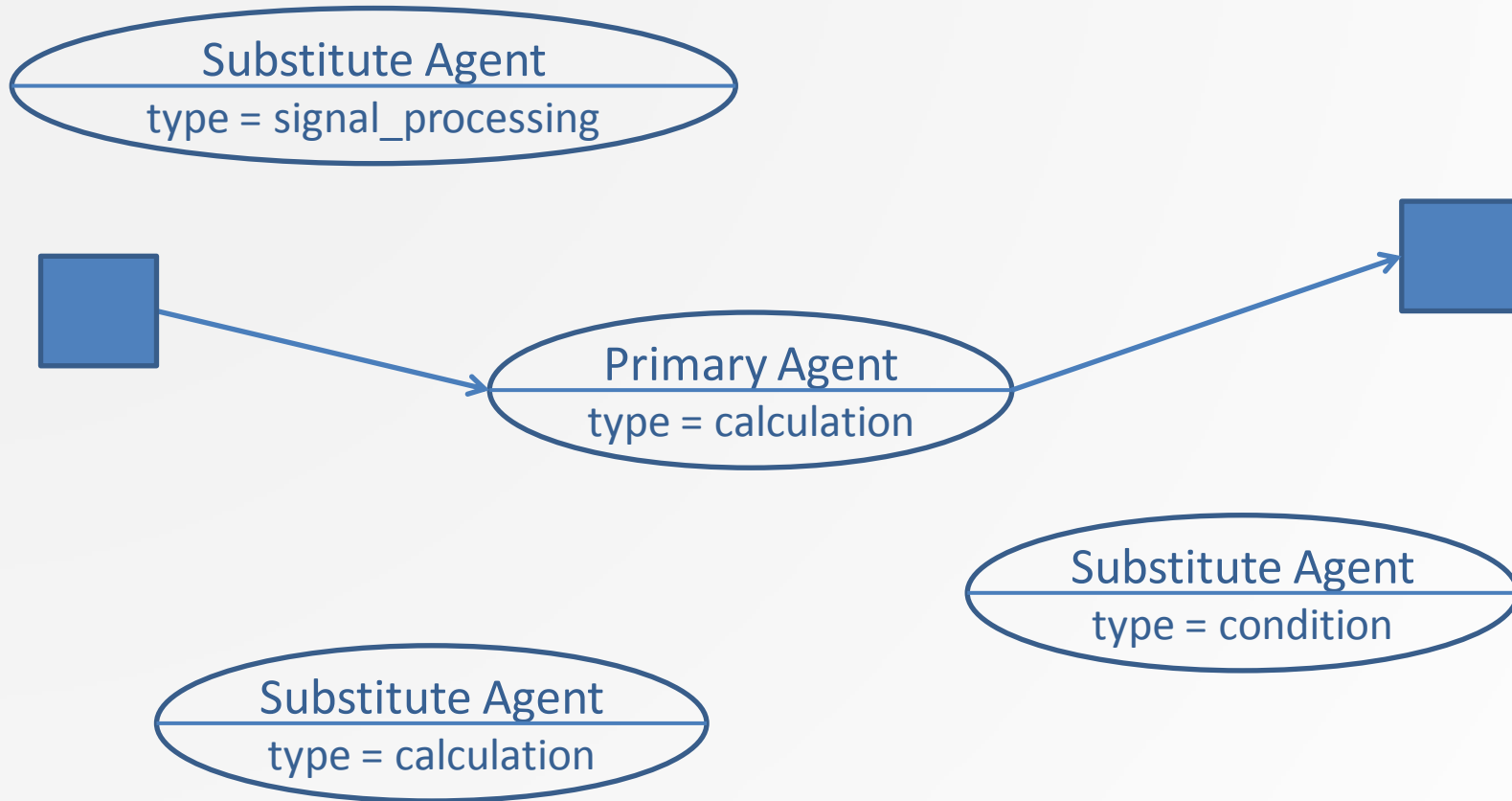
1. join the smart space
2. insert description triples
3. insert protection for description triples
4. subscribes to triple that indicates what primary agent is substituted by this one ('Substitutes' triple)

## Operation

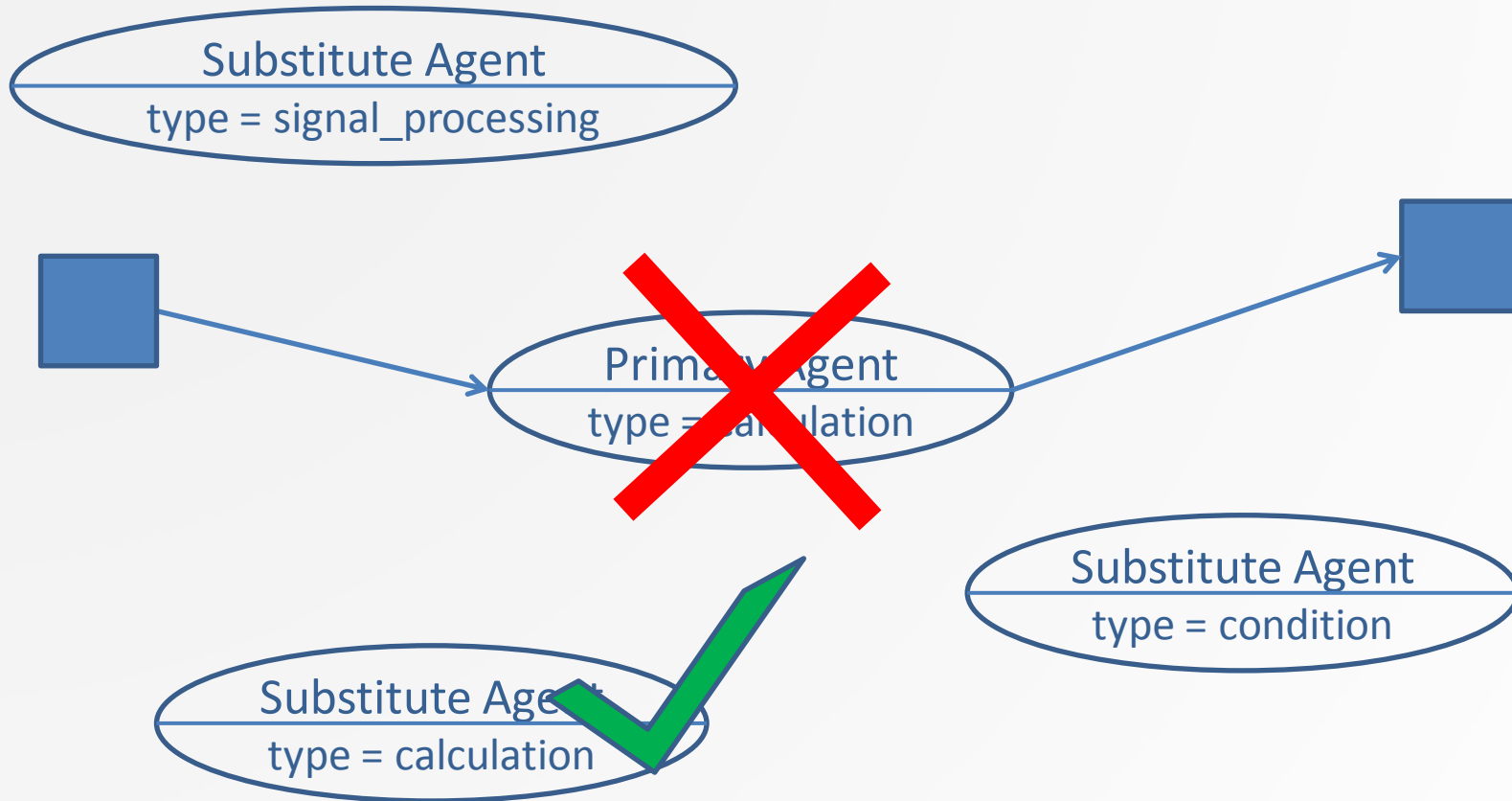


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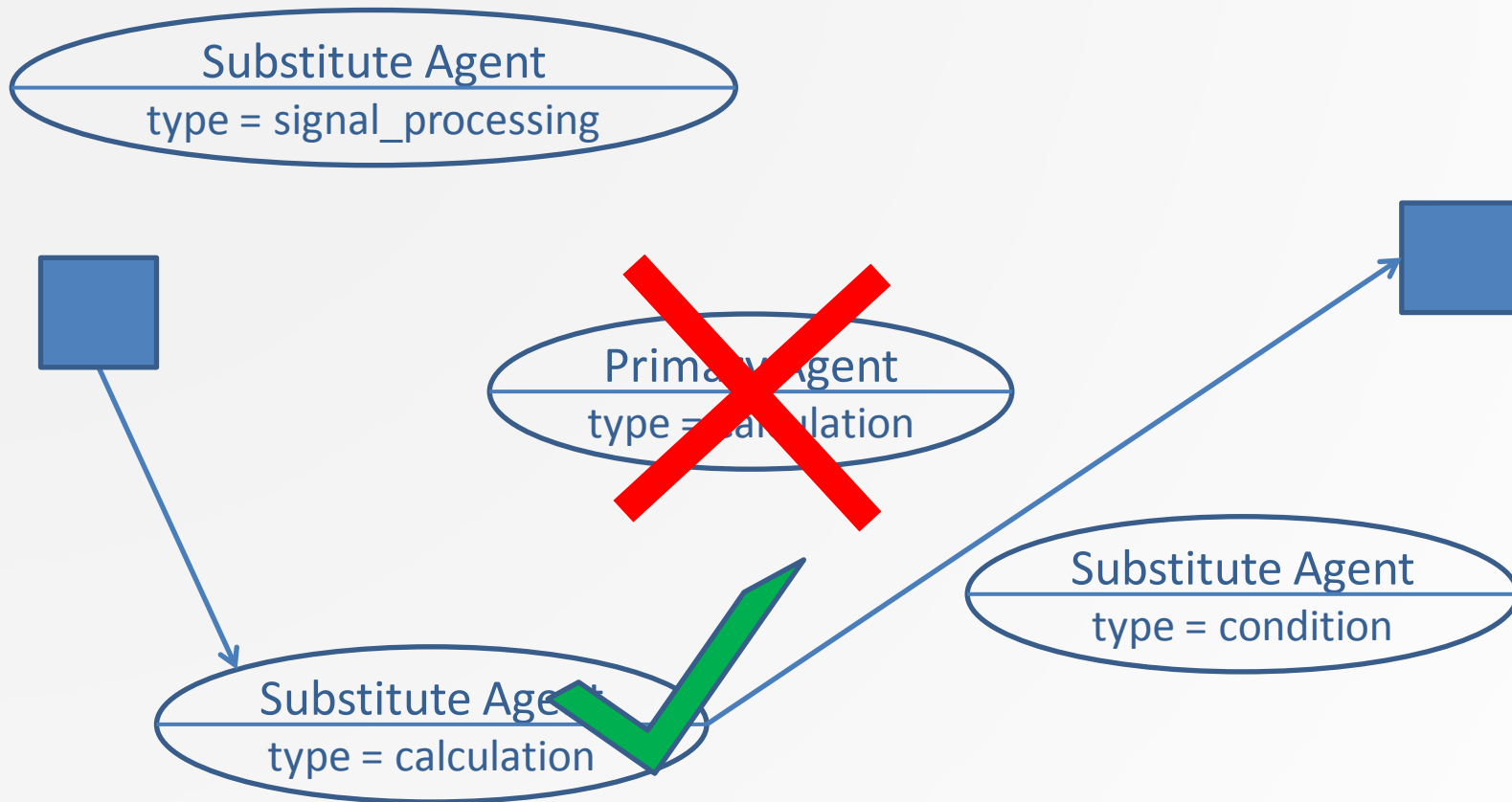
# Choosing the Substitute Agent



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# Motivation

- The behavior and basic operations of the agents are always the same
- The agents differs only in their programs



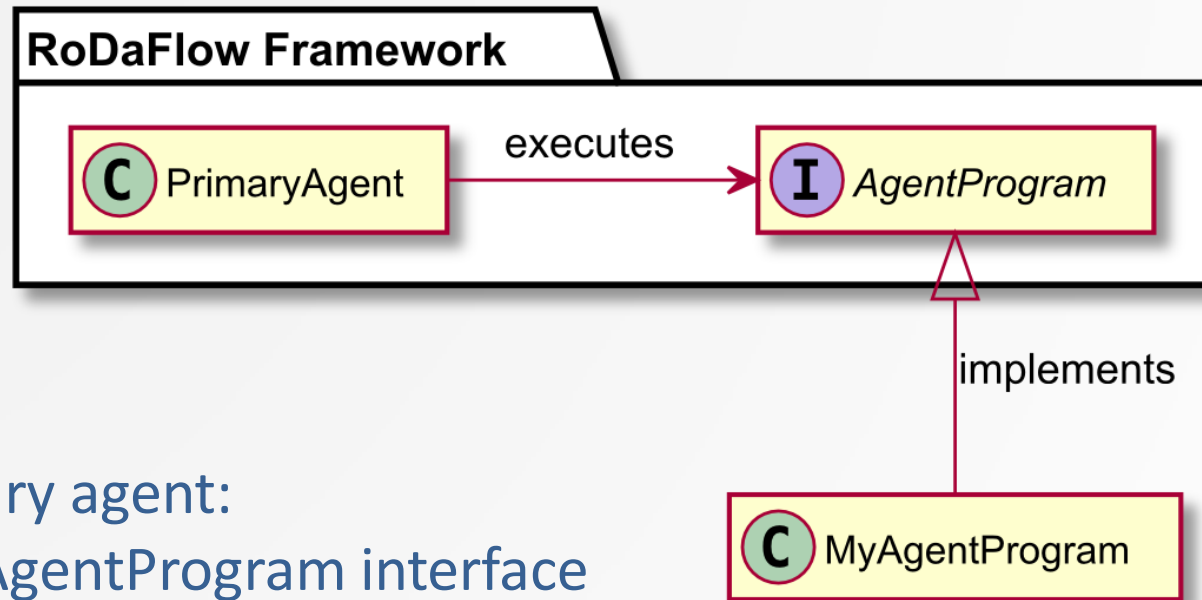
# RoDaFlow Framework

- Allows to create dataflow network agents for Smart-M3 platform
- Allows to create agents by implementing only their programs
- Created agents support substitution mechanism
- Written in Java
- Uses Java KPI





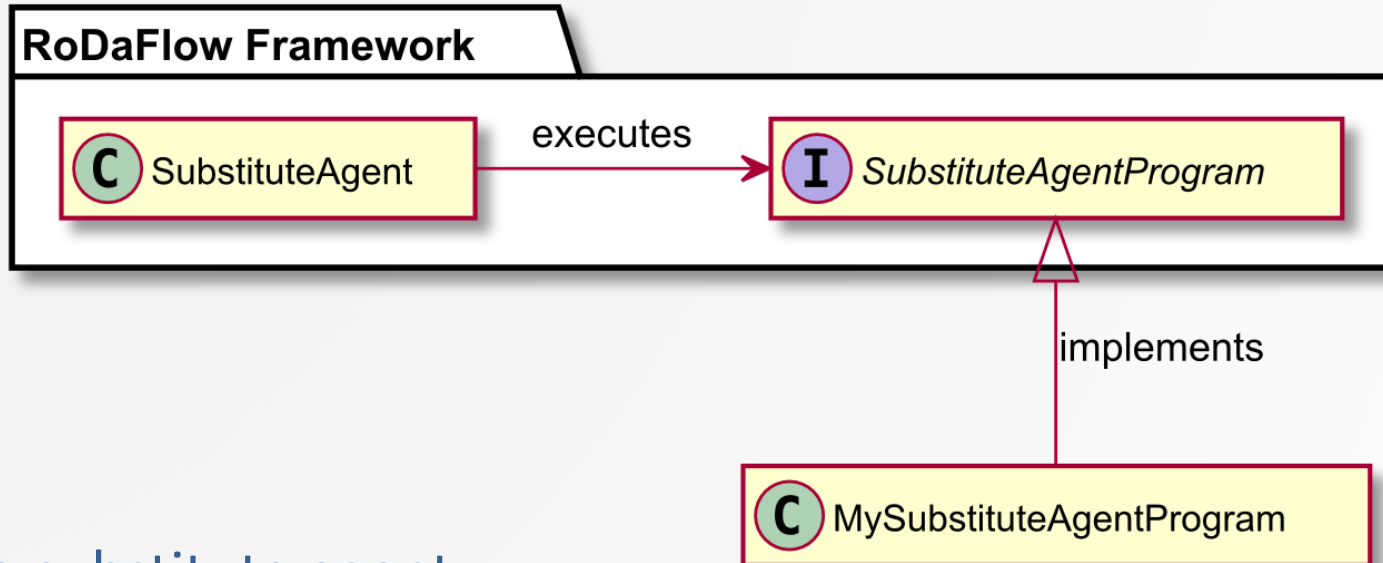
# Implementing Primary Agent



To create primary agent:

- Implement AgentProgram interface
- Create instance of PrimaryAgent class
- Pass implemented agent program to created instance
- Call the joinSIB method on the PrimaryAgent instance

# Implementing Substitute Agent



To create substitute agent:

- Implement `SubstituteAgentProgram` interface
- Create instance of `SubstituteAgent` class
- Pass implemented substitute agent program to created instance
- Call the `joinSIB` method on the `SubstituteAgent` instance

# RoDaFlow Framework Benefits

- Saves the agents developer's time
- Simplifies the development of the agents
- Hence simplifies the development of dataflow network based systems
- Does not require from the developer any additional knowledge of substitution mechanism implementation
- Allows to create agents for:
  - Popular desktop platforms
  - Mobile devices
  - Oracle's Internet of Things platform



# Thank You!

## Q&A



RoDaFlow framework homepage:  
<http://yar.fruct.org/projects/rodaflow>

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# Agent Classes

