Data Modeling Report

MultiplierNode

Version 1.0 ● Proposed

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1   MultiplierNode

Package in package 'Model'

1.1   MultiplierNode diagram

Class diagram in package 'MultiplierNode'
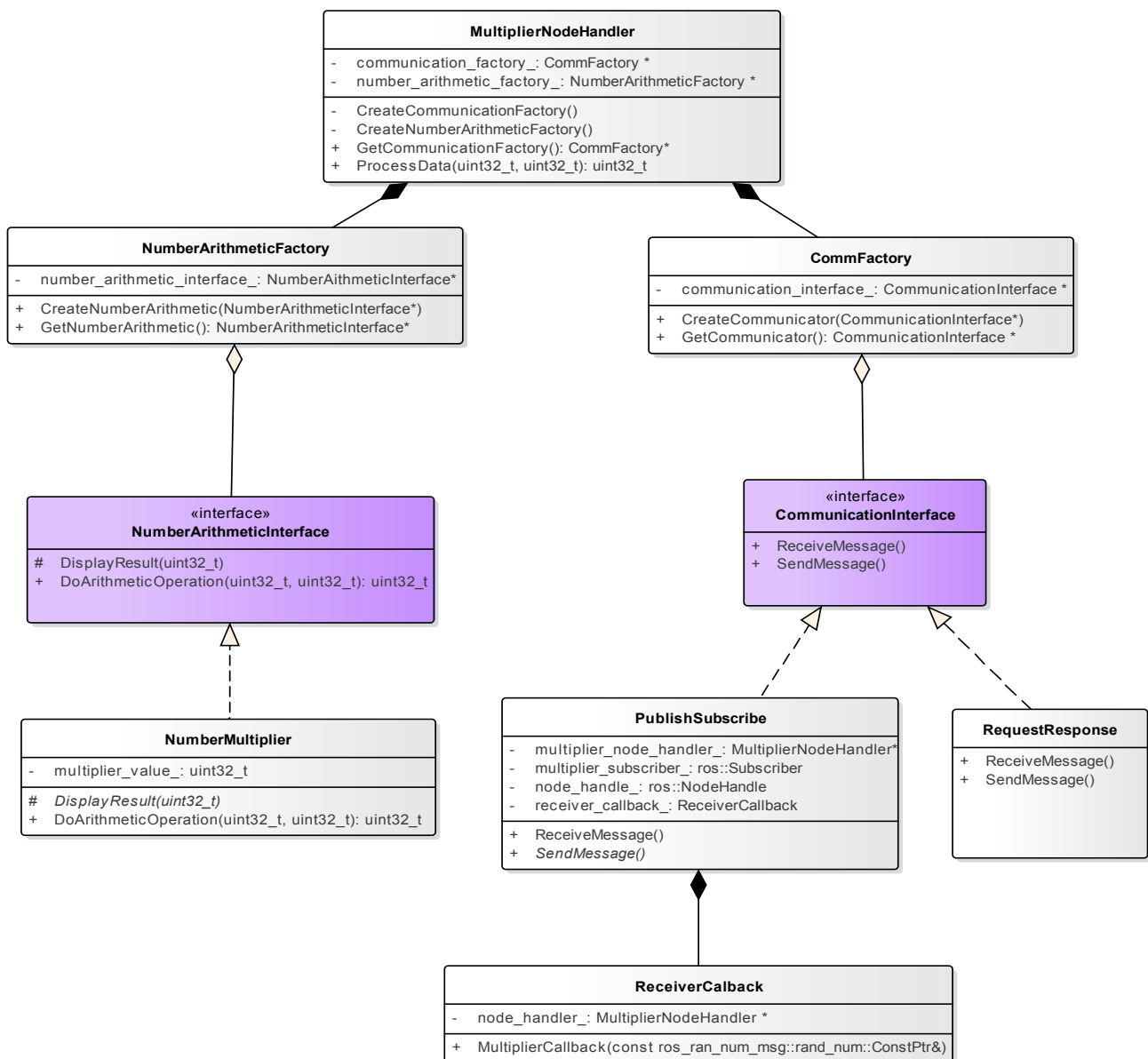
Figure 1:   MultiplierNode

1.2   CommFactory

Class in package 'MultiplierNode'

Factory to create communication objects

CommFactory
Version 2.0 Phase 1.0 Proposed
KPIT created on 10/17/2017. Last modified 10/19/2017

OUTGOING STRUCTURAL RELATIONSHIPS
⬅ Aggregation from CommFactory to MultiplierNodeHandler
[Direction is 'Source -> Destination'.]

INCOMING STRUCTURAL RELATIONSHIPS
➡ Aggregation from CommunicationInterface to CommFactory
[Direction is 'Source -> Destination'.]

ATTRIBUTES
◆ communication_interface_ : CommunicationInterface * Private
[Is static False. Containment is Not Specified.]

OPERATIONS
◆ CreateCommunicator (comm_int : CommunicationInterface*) : Public
[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]
◆ GetCommunicator () : CommunicationInterface * Public
[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.3   MultiplierNodeHandler

Class in package 'MultiplierNode'

Handler to perform communication and message processing functionality

MultiplierNodeHandler
Version 2.0 Phase 1.0 Proposed
KPIT created on 10/17/2017. Last modified 10/19/2017

INCOMING STRUCTURAL RELATIONSHIPS
➡ Aggregation from NumberArithmeticFactory to MultiplierNodeHandler
[Direction is 'Source -> Destination'.]
➡ Aggregation from CommFactory to MultiplierNodeHandler
[Direction is 'Source -> Destination'.]

ATTRIBUTES

🔷 communication_factory_ : CommFactory * Private

[Is static False. Containment is Not Specified.]

🔷 number_arithmetic_factory_ : NumberArithmeticFactory * Private

[Is static False. Containment is Not Specified.]

OPERATIONS

🔷 CreateCommunicationFactory () : Private

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

🔷 CreateNumberArithmeticFactory () : Private

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

🔷 GetCommunicationFactory () : CommFactory* Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

🔷 ProcessData (value1 : uint32_t , value2 : uint32_t) : uint32_t Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.4 NumberArithmeticFactory

Class in package 'MultiplierNode'

Factory for creation of arithmetic operation objects

NumberArithmeticFactory
Version 2.0 Phase 1.0 Proposed
systemsdemo created on 10/18/2017. Last modified 10/19/2017

OUTGOING STRUCTURAL RELATIONSHIPS

⬅ Aggregation from NumberArithmeticFactory to MultiplierNodeHandler

[Direction is 'Source -> Destination'.]

INCOMING STRUCTURAL RELATIONSHIPS

➡ Aggregation from NumberArithmeticInterface to NumberArithmeticFactory

[Direction is 'Source -> Destination'.]

ATTRIBUTES

🔷 number_arithmetic_interface_ : NumberAithmeticInterface* Private

[Is static False. Containment is Not Specified.]

OPERATIONS

🔷 CreateNumberArithmetic (number_arithmetic_interface : NumberArithmeticInterface*) : Public

OPERATIONS

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

◆ GetNumberArithmetic () : NumberArithmeticInterface* Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.5   NumberMultiplier

Class in package 'MultiplierNode'

NumberMultiplier
Version 2.0 Phase 1.0 Proposed
KPIT created on 10/18/2017. Last modified 10/19/2017

OUTGOING STRUCTURAL RELATIONSHIPS

⬅ Realization from NumberMultiplier to NumberArithmeticInterface

[Direction is 'Source -> Destination'.]

ATTRIBUTES

◆ multiplier_value_ : uint32_t Private

[Is static False. Containment is Not Specified.]

OPERATIONS

◆ DisplayResult (value : uint32_t) : Protected

Properties:
Implements = NumberArithmeticInterface.PrintValue
ImplementsGuid = {4D16A022-A769-4016-826C-44A052E4698A}

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

◆ DoArithmeticOperation (value1 : uint32_t , vaue2 : uint32_t) : uint32_t Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.6   PublishSubscribe

Class in package 'MultiplierNode'

Perform publish subscribe mode of communication

PublishSubscribe
Version 2.0 Phase 1.0 Proposed
KPIT created on 10/17/2017. Last modified 10/19/2017

OUTGOING STRUCTURAL RELATIONSHIPS

⬅ Realization from PublishSubscribe to CommunicationInterface

[Direction is 'Source -> Destination'.]

INCOMING STRUCTURAL RELATIONSHIPS

➡ Aggregation from ReceiverCalback to PublishSubscribe

[Direction is 'Source -> Destination'.]

ATTRIBUTES

🔹 multiplier_node_handler_ : MultiplierNodeHandler* Private

[Is static False. Containment is Not Specified.]

🔹 multiplier_subscriber_ : ros::Subscriber Private

[Is static False. Containment is Not Specified.]

🔹 node_handle_ : ros::NodeHandle Private

[Is static False. Containment is Not Specified.]

🔹 receiver_callback_ : ReceiverCallback Private

[Is static False. Containment is Not Specified.]

OPERATIONS

🔹 ReceiveMessage () : Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

🔹 SendMessage () : Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.7   ReceiverCalback

Class in package 'MultiplierNode'

ReceiverCalback
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OUTGOING STRUCTURAL RELATIONSHIPS

⬅ Aggregation from ReceiverCalback to PublishSubscribe

[Direction is 'Source -> Destination'.]

ATTRIBUTES

🔹 node_handler_ : MultiplierNodeHandler * Private

[Is static False. Containment is Not Specified.]

OPERATIONS

🔹 MultiplierCallback (value : const ros_ran_num_msg::rand_num::ConstPtr&) : Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

1.8 RequestResponse

Class in package 'MultiplierNode'

Perform request response mode of communication

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RequestResponse
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OUTGOING STRUCTURAL RELATIONSHIPS

⬅ Realization from RequestResponse to CommunicationInterface

[Direction is 'Source -> Destination'.]

OPERATIONS

🔶 ReceiveMessage () : Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]

🔶 SendMessage () : Public

[Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False.]