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Messir Analysis Document
- v 0.0 -

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Tuesday 22nd November, 2016 - 22:08

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Chapter 1

Introduction

1.1 Overview

1.2 Purpose and recipients of the document

1.3 Application Domain

1.4 Definitions, acronyms and abbreviations

1.5 Document structure

Chapter 2

General Description

2.1 Domain Stakeholders

2.2 System's Actors

The objective of this section is not to provide the full requirement elicitation document in this section but to reuse a part of this document to provide a informal introduction to the Messir specification of the system under development. The use case model is made of a use case diagrams modelling abstractly and informally the actors and their use cases together with a set of use cases descriptions. In addition, those diagrams and description tables are adapted to the Messir specification since actor and messages names together with parameters are partly adapted to be consistent with the specification identifiers (see [1] for more details).

2.3 Use Cases Model

This section contains the use cases elicited during the requirements elicitation phase. The use cases are textually described as suggested by the Messir method and inspired by the standard Cokburn template [2].

2.3.1 Use Cases

2.3.1.1 summary-suGlobalManagementOfEvent

Shows the suGlobaManagementOfEvent use-case and its actors.

Use-Case Description	
Name	suGlobalManagementOfEvent
Scope	system
Level	summary
Primary actor(s)	
1	`actCentralCoordinator[active]`
Secondary actor(s)	
1	`actCommunicationCompany[active]`
2	`actFiremenCoordinator[active]`
3	`actTowServiceCoordinator[active]`
4	`actPoliceCoordinator[active]`
Goal(s) description	
Shows the suGlobaManagementOfEvent use-case and its actors.	
Protocol condition(s)	
1	
Pre-condition(s)	
1	
Main post-condition(s)	
1	
Main Steps	
a	the actor `actCentralCoordinator` executes the `ugCreateNewCrisisEvent` use case
b	the actor `actFiremenCoordinator` executes the `ugGlobalDispatchManagement` use case
c	the actor `actTowServiceCoordinator` executes the `ugGlobalDispatchManagement` use case
Steps Ordering Constraints	

continues in next page . . .

. . . Use-Case Description table continuation

1	step (a) must be executed before step (b) or step (c)
2	step (b) XOR step (c)
Additional Information	
none	

Figure 2.1 Shows the suGlobaManagementOfEvent use-case and its actors.

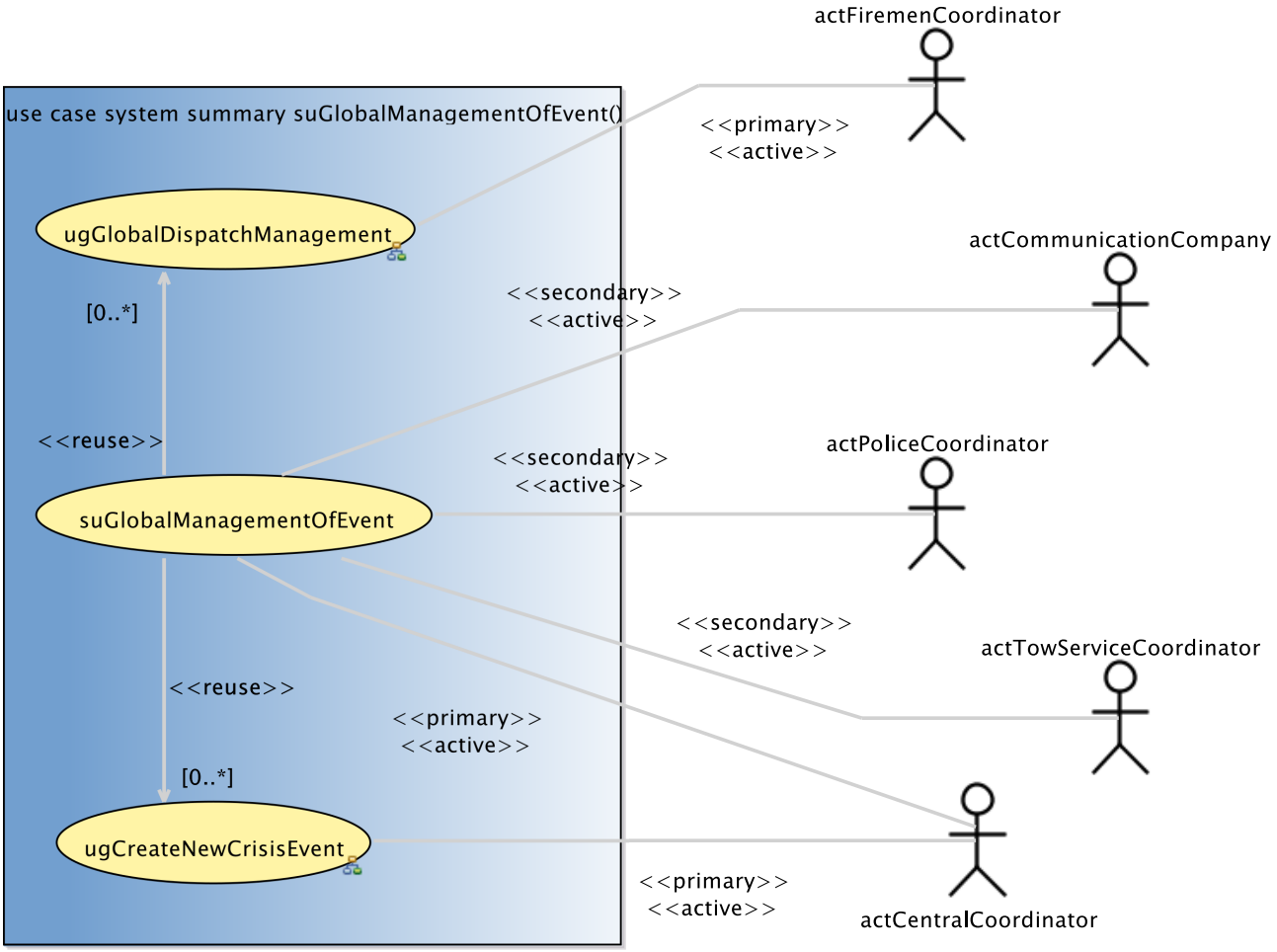

Figure 2.1:

2.3.1.2 usergoal-ugCreateNewCrisisEvent

Shows the ugCreateNewCrisisEvent use-case and its actors.

USE-CASE DESCRIPTION	
Name	ugCreateNewCrisisEvent
Scope	system
Level	usergoal
Primary actor(s)	

continues in next page . . .

... Use-Case Description table continuation

1	actCentralCoordinator[active]
Secondary actor(s)	
1	actCommunicationCompany[active]
Goal(s) description	
Shows the ugCreateNewCrisisEvent use-case and its actors.	
Reuse	
1	oeRequestCrisisEventLocation [0..*]
2	oeReceiveCrisisEventLocation [0..*]
3	oeConfirmCrisisEventLocation [1..*]
4	oeCreateNewCrisisEvent [1..*]
Protocol condition(s)	
1	
Pre-condition(s)	
1	
Main post-condition(s)	
1	
Main Steps	
a	the actor actCentralCoordinator executes the oeRequestCrisisEventLocation use case
b	the actor actCommunicationCompany executes the oeReceiveCrisisEventLocation use case
c	the actor actCentralCoordinator executes the oeConfirmCrisisEventLocation use case
d	the actor actCentralCoordinator executes the oeCreateNewCrisisEvent use case
Steps Ordering Constraints	
1	if (b) then previously (a)
2	step (c) must be executed before step (d)
Additional Information	
none	

Figure 2.2 Shows the ugCreateNewCrisisEvent use-case and its actors.

2.3.1.3 usergoal-ugGlobalDispatchManagement

Shows the ugGlobalDispatchManagement use-case and its actors.

USE-CASE DESCRIPTION	
Name	ugGlobalDispatchManagement
Scope	system
Level	usergoal
Primary actor(s)	
1	actFiremenCoordinator[active]
Secondary actor(s)	
1	actFiremenCoordinator[active]
2	actTowServiceCoordinator[active]
3	actPoliceCoordinator[active]

continues in next page . . .

... Use-Case Description table continuation

Goal(s) description	
Shows the ugGlobalDispatchManagement use-case and its actors.	
Protocol condition(s)	
1	
Pre-condition(s)	
1	
Main post-condition(s)	
1	
Main Steps	
a	the actor `actFiremenCoordinator` executes the `oeUpdateDispatchStatus` use case
b	the actor `actTowServiceCoordinator` executes the `oeRefreshMap` use case
c	the actor `actTowServiceCoordinator` executes the `oeMessage` use case
d	the actor `actTowServiceCoordinator` executes the `oeUpdateDispatchStatus` use case
e	the actor `actFiremenCoordinator` executes the `oeRequestHelp` use case
f	the actor `actPoliceCoordinator` executes the `oeUpdateDispatchStatus` use case
Steps Ordering Constraints	
1	step (a) must be executed at least two times
2	step (d) must be executed at least two times
3	step (f) can only be executed if step (e) has at least been executed once previously
4	step (f) must be executed at least two times
Additional Information	
none	

Figure 2.3 Shows the ugGlobalDispatchManagement use-case and its actors.

2.3.1.4 subfunction-oeConfirmCrisisEventLocation

sent to confirm the crisis event's location.

USE-CASE DESCRIPTION	
Name	oeConfirmCrisisEventLocation
Scope	system
Level	subfunction
Primary actor(s)	
1	`actCentralCoordinator[active]`
Goal(s) description	
sent to confirm the crisis event's location.	
Protocol condition(s)	
1	
Pre-condition(s)	
1	
Main post-condition(s)	
1	
Additional Information	
none	

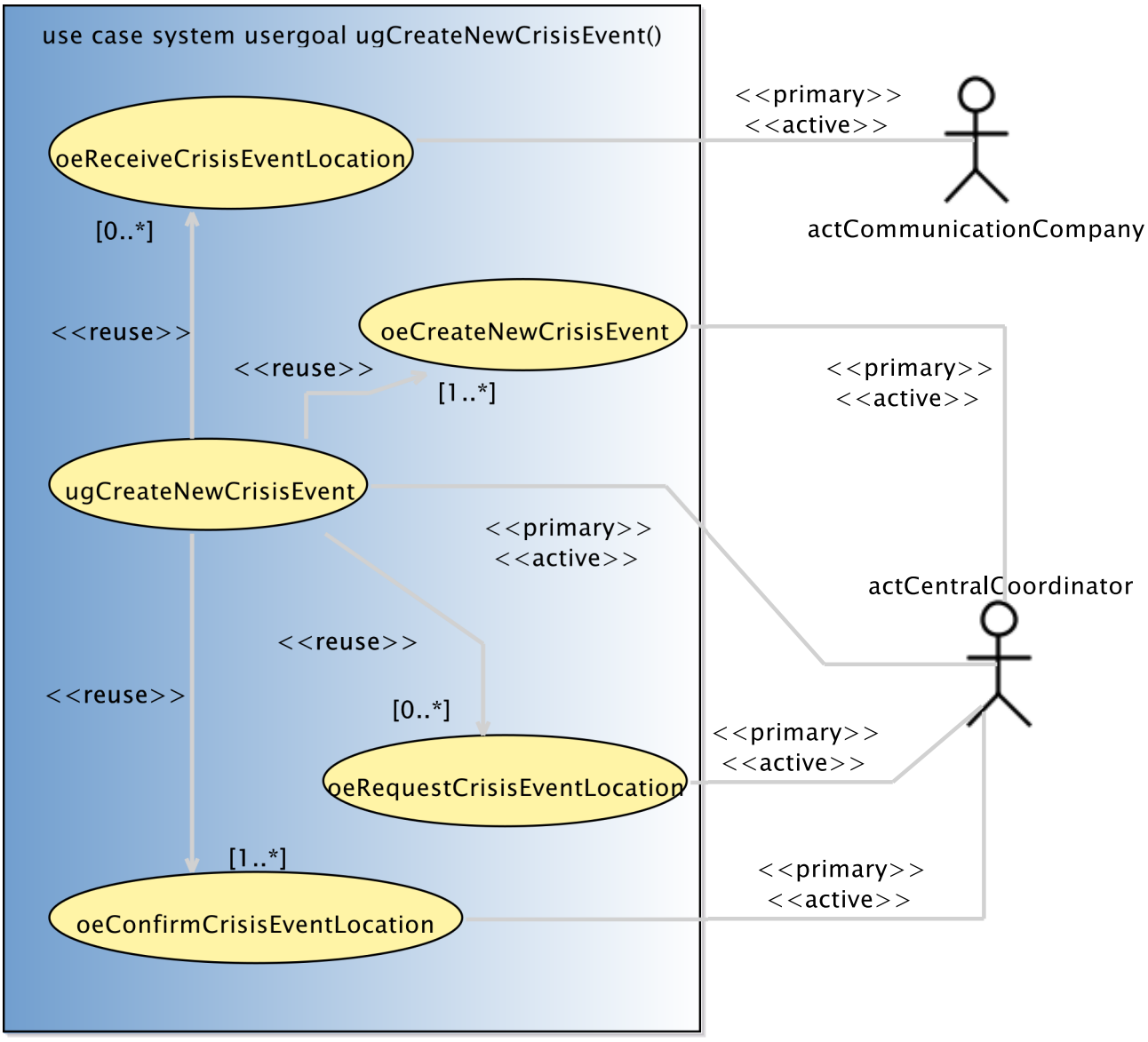
use case system usergoal ugCreateNewCrisisEvent()
oeReceiveCrisisEventLocation
[0..*]
<<reuse>>
oeCreateNewCrisisEvent
<<reuse>>
[1..*]
ugCreateNewCrisisEvent
<<reuse>>
<<reuse>>
[0..*]
oeRequestCrisisEventLocation
[1..*]
oeConfirmCrisisEventLocation
<<primary>>
<<active>>
actCommunicationCompany
<<primary>>
<<active>>
<<primary>>
<<active>>
actCentralCoordinator
<<primary>>
<<active>>
<<primary>>
<<active>>

Figure 2.2:

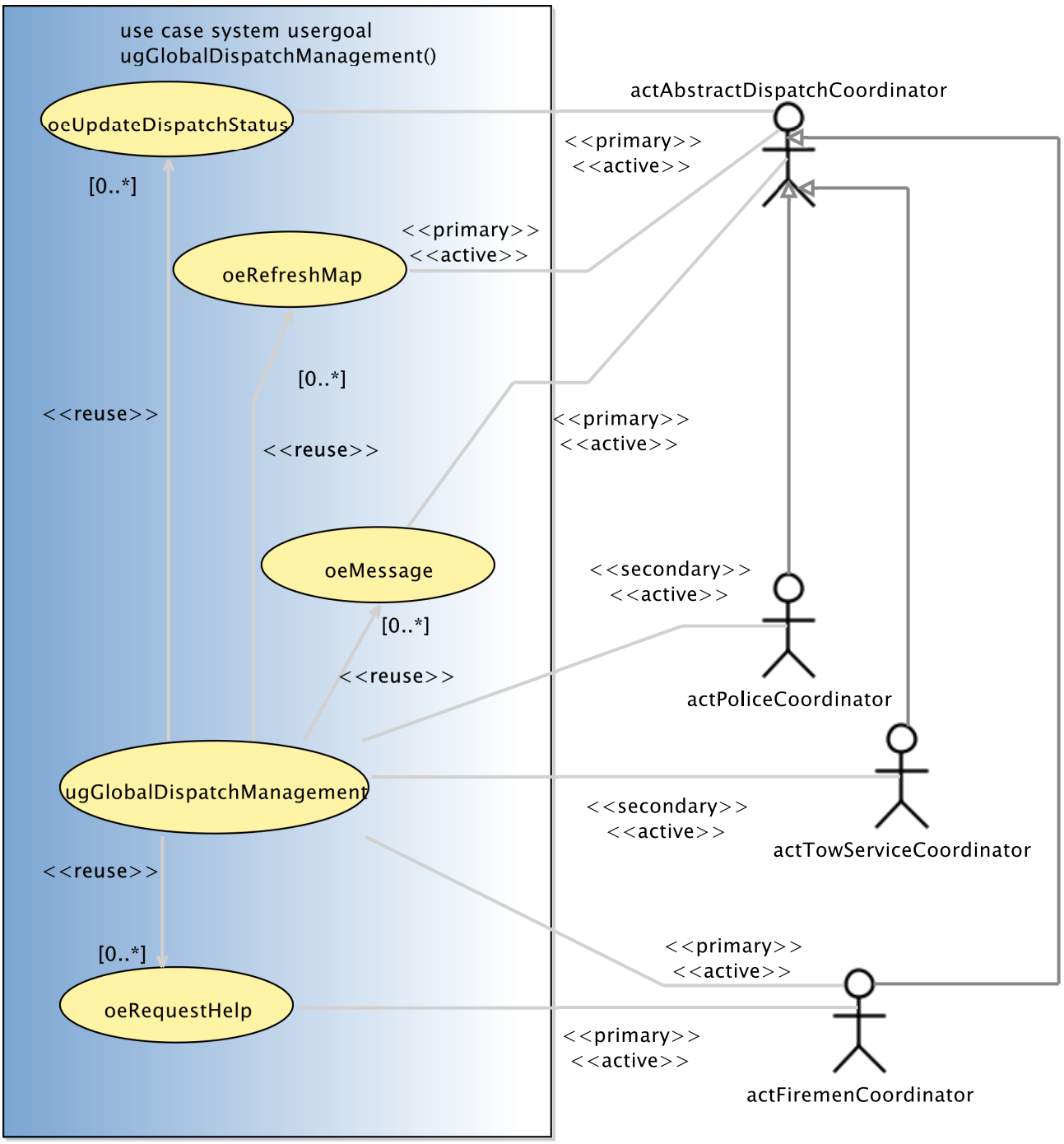
use case system usergoal
ugGlobalDispatchManagement()
oeUpdateDispatchStatus
oeRefreshMap
oeMessage
ugGlobalDispatchManagement
oeRequestHelp
[0..*]
[0..*]
[0..*]
[0..*]
<<reuse>>
<<reuse>>
<<reuse>>
<<reuse>>
actAbstractDispatchCoordinator
<<primary>>
<<active>>
<<primary>>
<<active>>
<<primary>>
<<active>>
<<secondary>>
<<active>>
actPoliceCoordinator
<<secondary>>
<<active>>
actTowServiceCoordinator
<<primary>>
<<active>>
<<primary>>
<<active>>
actFiremenCoordinator

Figure 2.3:

2.3.1.5 subfunction-oeCreateNewCrisisEvent

sent to create an new crisis event and to alert the corresponding coordinators.

Use-Case Description	
Name	oeCreateNewCrisisEvent
Scope	system
Level	subfunction
Parameters	
AdtCrisisID: dtCrisisID 1 AdtName: ptString 2 AetHumanType: etHumanType 3 AdtPhoneNumber: dtPhoneNumber 4 AdtMapWithPin: dtMapWithPin 5	
Primary actor(s)	
1	`actCentralCoordinator[active]`
Secondary actor(s)	
1	`actAbstractDispatchCoordinator[passive]`
Goal(s) description	
sent to create an new crisis event and to alert the corresponding coordinators.	
Protocol condition(s)	
1	
Pre-condition(s)	
1	
Main post-condition(s)	
1	
Additional Information	
none	

2.3.1.6 subfunction-oeMessage

sent to transmit a message.

Use-Case Description	
Name	oeMessage
Scope	system
Level	subfunction
Parameters	
AMessage: ptString 1	
Primary actor(s)	
1	`actAbstractDispatchCoordinator[active]`
Secondary actor(s)	

continues in next page . . .

... Use-Case Description table continuation

1	actCentralCoordinator[passive]
2	actAbstractDispatchCoordinator[multiple]
Goal(s) description	
sent to transmit a message.	
Protocol condition(s)	
1	
Pre-condition(s)	
1	
Main post-condition(s)	
1	
Additional Information	
none	

2.3.1.7 subfunction-oeReceiveCrisisEventLocation

sent to return a map with pin.

USE-CASE DESCRIPTION	
Name	oeReceiveCrisisEventLocation
Scope	system
Level	subfunction
Parameters	
AdtMapWithPin: dtMapWithPin 1	
Primary actor(s)	
1	actCommunicationCompany[active]
Secondary actor(s)	
1	actCentralCoordinator[passive]
Goal(s) description	
sent to return a map with pin.	
Protocol condition(s)	
1	
Pre-condition(s)	
1	
Main post-condition(s)	
1	
Additional Information	
none	

2.3.1.8 subfunction-oeRefreshMap

sent to refresh the map.

USE-CASE DESCRIPTION	
Name	oeRefreshMap
Scope	system

continues in next page . . .

... Use-Case Description table continuation

Level	subfunction
Parameters	
AdtCrisisID: dtCrisisID 1	
Primary actor(s)	
1	`actAbstractDispatchCoordinator[active]`
Goal(s) description	
sent to refresh the map.	
Protocol condition(s)	
1	
Pre-condition(s)	
1	
Main post-condition(s)	
1	
Additional Information	
none	

2.3.1.9 subfunction-oeRequestCrisisEventLocation

sent to request a crisis event's location.

USE-CASE DESCRIPTION	
Name	oeRequestCrisisEventLocation
Scope	system
Level	subfunction
Parameters	
AdtPhoneNumber: dtPhoneNumber 1	
Primary actor(s)	
1	`actCentralCoordinator[active]`
Secondary actor(s)	
1	`actCommunicationCompany[passive]`
Goal(s) description	
sent to request a crisis event's location.	
Protocol condition(s)	
1	
Pre-condition(s)	
1	
Main post-condition(s)	
1	
Additional Information	
none	

2.3.1.10 subfunction-oeRequestHelp

sent to request help from the corresponding team type.

Use-Case Description	
Name	oeRequestHelp
Scope	system
Level	subfunction
Parameters	
AetTeamType: etTeamType 1 RequestedNumber: ptInteger 2	
Primary actor(s)	
1	`actFiremenCoordinator[active]`
Secondary actor(s)	
1	`actAbstractDispatchCoordinator[passive]`
Goal(s) description	
sent to request help from the corresponding team type.	
Protocol condition(s)	
1	
Pre-condition(s)	
1	
Main post-condition(s)	
1	
Additional Information	
none	

2.3.1.11 subfunction-oeUpdateDispatchStatus

sent to update the dispatch status.

Use-Case Description	
Name	oeUpdateDispatchStatus
Scope	system
Level	subfunction
Parameters	
AetDispatchStatus: etDispatchStatus 1	
Primary actor(s)	
1	`actAbstractDispatchCoordinator[active]`
Goal(s) description	
sent to update the dispatch status.	
Protocol condition(s)	
1	
Pre-condition(s)	
1	
Main post-condition(s)	
1	
Additional Information	
none	

2.3.2 Use Case Instance(s)

2.3.2.1 Use-Case Instance - ucisuGlobalManagementOfEvent:suGlobalManagementOfEvent

Shows the suGlobaManagementOfEvent instance.

SUMMARY USE-CASE INSTANCE
Instantiated Use Case suGlobalManagementOfEvent
Instance ID ucisuGlobalManagementOfEvent

Figure 2.4 Shows the suGlobaManagementOfEvent instance.

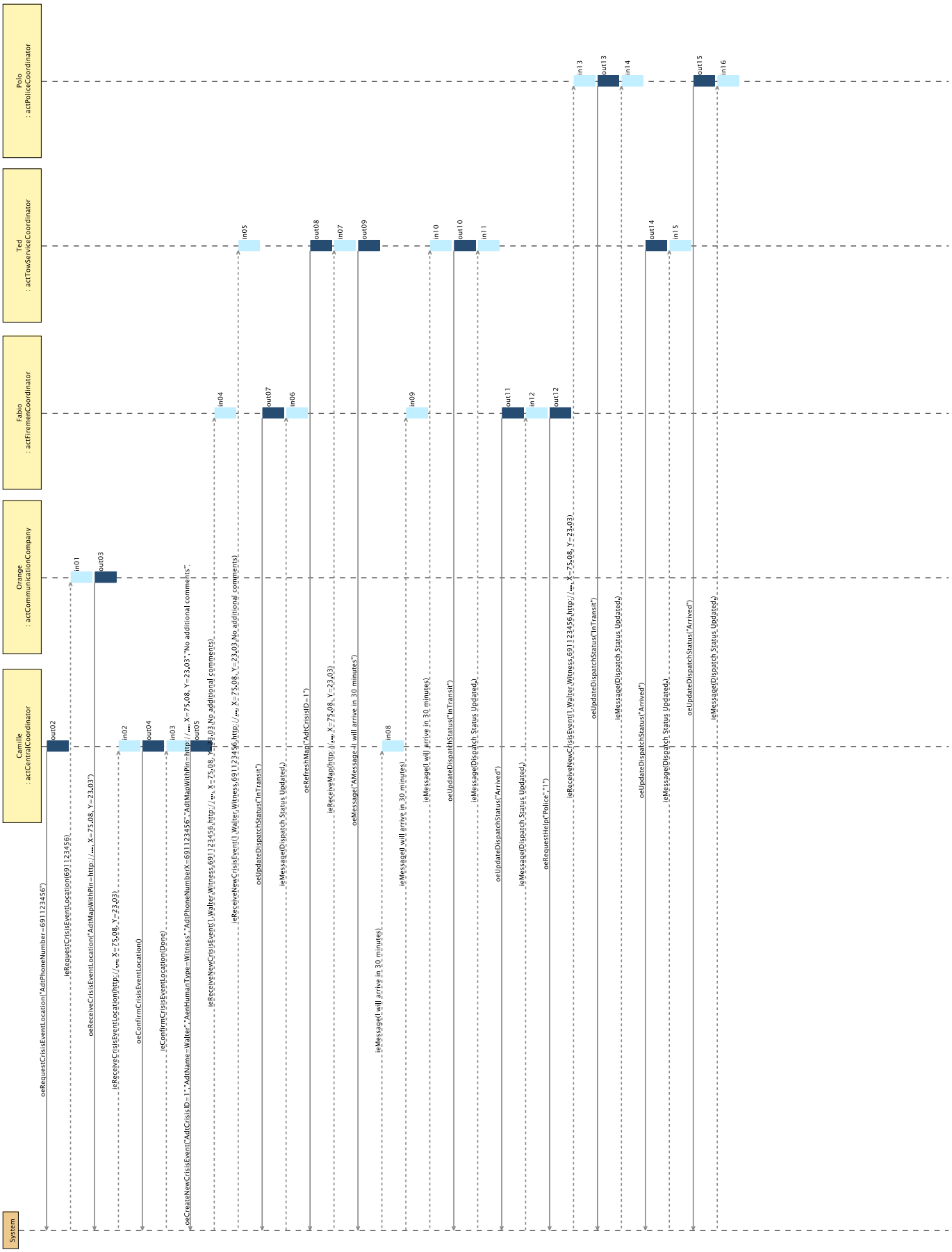
System
Camille : actCentralCoordinator
Orange : actCommunicationCompany
Fabio : actFiremenCoordinator
Ted : actTowServiceCoordinator
Polo : actPoliceCoordinator
oeRequestCrisisEventLocation("AdtPhoneNumber=691123456")
ieRequestCrisisEventLocation(691123456)
oeReceiveCrisisEventLocation("AdtMapWithPin=http://..., X=75,08, Y=23,03")
ieReceiveCrisisEventLocation(http://..., X=75,08, Y=23,03)
oeConfirmCrisisEventLocation()
ieConfirmCrisisEventLocation(Done)
oeCreateNewCrisisEvent("AdtCrisisID=1","AdtName=Walter","AenHumanType=Witness","AdtPhoneNumberX=691123456","AdtMapWithPin=http://..., X=75,08, Y=23,03","No additional comments")
ieReceiveNewCrisisEvent(1,Walter,Witness,691123456,http://..., X=75,08, Y=23,03,No additional comments)
ieReceiveNewCrisisEvent(1,Walter,Witness,691123456,http://..., X=75,08, Y=23,03,No additional comments)
oeUpdateDispatchStatus("InTransit")
ieMessage(Dispatch Status Updated)
oeRefreshMap("AdtCrisisID=1")
ieReceiveMap(http://..., X=75,08, Y=23,03)
oeMessage("AMessage=I will arrive in 30 minutes")
ieMessage(I will arrive in 30 minutes)
ieMessage(I will arrive in 30 minutes)
ieMessage(I will arrive in 30 minutes)
oeUpdateDispatchStatus("InTransit")
ieMessage(Dispatch Status Updated)
ieMessage(Dispatch Status Updated)
oeUpdateDispatchStatus("Arrived")
ieMessage(Dispatch Status Updated)
oeRequestHelp("Police","1")
ieReceiveNewCrisisEvent(1,Walter,Witness,691123456,http://..., X=75,08, Y=23,03)
oeUpdateDispatchStatus("InTransit")
ieMessage(Dispatch Status Updated)
oeUpdateDispatchStatus("Arrived")
ieMessage(Dispatch Status Updated)
oeUpdateDispatchStatus("Arrived")
ieMessage(Dispatch Status Updated)
out02
in01
out03
in02
out04
in03
out05
in04
in05
out07
in06
out08
in07
out09
in08
in09
in10
out10
in11
out11
in12
out12
in13
out13
in14
out14
in15
out15
in16

Figure 2.4:

Chapter 3

Environment Model

3.1 Environment model view(s)

There are no view(s) for the Messir environment model.

3.2 Actors and Interfaces Descriptions

We provide for the given views the description of the actors together with their associated input and output interface descriptions.

3.2.1 `actAbstractDispatchCoordinator` Actor

Actor
actAbstractDispatchCoordinator An abstract Actor which brings together the common operations of the FiremanCoordinator, the PoliceCoordinator and the TowServiceCoordinator.
OutputInterfaces
OUT 1 **`oeMessage(AMessage:ptString):ptBoolean`** OUT 2 **`oeUpdateDispatchStatus(AetDispatchStatus:etDispatchStatus):ptBoolean`**
InputInterfaces
IN 1 **`ieReceiveNewCrisisEvent(AdtCrisisID:dtCrisisID, AdtName:ptString, AetHumanType:etHumanType, AdtPhoneNumber:dtPhoneNumber, AdtMapWithPin:dtAddress, AMessage:ptString):ptBoolean`** IN 2 **`ieMessage(AMessage:ptString):ptBoolean`**

3.2.2 `actCentralCoordinator` Actor

Actor
actCentralCoordinator Is representing the person that receives the victim's or witness' call in the emergency central.
OutputInterfaces

continues in next page . . .

... Actor table continuation

OUT 1	**oeRequestCrisisEventLocation(AdtPhoneNumber:dtPhoneNumber):ptBoolean**
OUT 2	**oeMessage(AMessage:ptString):ptBoolean**
OUT 3	**oeCreateNewCrisisEvent(AdtCrisisID:dtCrisisID, AdtName:ptString, AetHumanType:etHumanType, AdtPhoneNumber:dtPhoneNumber, AdtMapWithPin:dtAddress, AMessage:ptString):ptBoolean**
OUT 4	**oeConfirmCrisisEventLocation():ptBoolean**
InputInterfaces	
IN 1	**ieReceiveCrisisEventLocation(AdtMapWithPin:dtMapWithPin):ptBoolean**
IN 2	**ieMessage(AMessage:ptString):ptBoolean**

3.2.3 `actCommunicationCompany` Actor

ACTOR	
actCommunicationCompany	
Is representing any communication company in Luxembourg.	
OutputInterfaces	
OUT 1	**oeReceiveCrisisEventLocation(AdtMapWithPin:dtMapWithPin):ptBoolean**
InputInterfaces	
IN 1	**ieRequestCrisisEventLocation(AdtPhoneNumber:dtPhoneNumber):ptBoolean**

3.2.4 `actFiremenCoordinator` Actor

ACTOR	
actFiremenCoordinator	
Is representing any firemen team leader able to manage a two Ambulances.	
Extends	
lu.uni.lassy.excalibur.group09.spec.environment.actAbstractDispatchCoordinator	
OutputInterfaces	
OUT 1	**oeRequestHelp(AetTeamType:etTeamType, ARequestedNumber:ptInteger):ptBoo**

3.2.5 `actPoliceCoordinator` Actor

ACTOR	
actPoliceCoordinator	
Is representing a police team leader.	
Extends	

continues in next page ...

. . . Actor table continuation

lu.uni.lassy.excalibur.group09.spec.environment.actAbstractDispatchCoordinator

3.2.6 `actTowServiceCoordinator` Actor

ACTOR
actTowServiceCoordinator
Is representing a tow service driver.
Extends
lu.uni.lassy.excalibur.group09.spec.environment.actAbstractDispatchCoordinator

Chapter 4

Concept Model

4.1 PrimaryTypes-Classes

4.1.1 Local view 12

Figure 4.1 View of all the associations.

4.2 PrimaryTypes-Datatypes

4.2.1 Local view 15

Figure 4.2 View of all the datatypes

4.3 Concept Model Types Descriptions

This section provides the textual descriptions of all the types defined in the concept model and that can be part of the graphical views provided.

4.3.1 Primary types - Class types descriptions

The table below is providing comments on the graphical views given for the class types of the primary types. Type logical operations are precisely specified in the operation model.

Classes	
ctCrisisEvent A class containing the attributes identifying a crisis event.	
attribute	**comment: ptString**
attribute	**id: ptInteger**
attribute	**isLocationConfirmed: ptBoolean**
attribute	**location: dtMapWithPin**

continues in next page . . .

... Classes table continuation

operation	**init(Aid:ptInteger, Alocation:dtMapWithPin, AisLocationConfirmed:ptBoolean, Acomment:ptString, AgeoPos:dtGeoPos):ptBoolean**
ctDispatchedCoordinator	
A class containing the attributes identifying a dispatched team.	
attribute	**status: etDispatchStatus**
attribute	**type: etTeamType**
operation	**init(Atype:etTeamType, Astatus:etDispatchStatus, AgeoPos:dtGeoPos):ptBoolean**
ctHuman	
A class containing the attributes identifying an human.	
attribute	**id: dtPhoneNumber**
attribute	**name: ptString**
attribute	**type: etHumanType**
operation	**init(Aid:dtPhoneNumber, Aname:ptString, Atype:etHumanType):ptBoolean**
ctMapWithPin	
A class containing an image which is the map including the pins.	
attribute	**mapWithPin: dtMapWithPin**
operation	**init(AmapWithPin:dtMapWithPin):ptBoolean**

4.3.2 Primary types - Datatypes types descriptions

The table below is providing comments on the graphical views given for the datatype types of the primary types.

DATATYPES	
dtGeoPos	
Two Real numbers used to identify a geographical position on earth.	
attribute	**latitude: dtLatitude**
attribute	**longitude: dtLongitude**
operation	**is():ptBoolean**
dtInteger	
A primary type Integer incuding some basic Integer operations.	
attribute	**value: ptInteger**

continues in next page ...

. . . Datatypes table continuation

dtMapWithPin
An image used to identify a map including some pins.
attribute **image: dtImage**
operation **is():ptBoolean**
operation **isMapRepresentation():ptBoolean**
dtReal
A primary type Real incuding some basic Real operations.
attribute **value: ptReal**
dtString
A primary type String incuding some basic String operations.
attribute **value: ptString**
operation **is():ptBoolean**
operation **length():ptInteger**
operation **myStringConcat(AdtString2IN:dtString):dtString**

Enumerations
etDispatchStatus
A String used to identify a dispatch status.
etHumanType
A String used to identify an Human type.
etTeamType
A String used to identify a team type.

4.3.3 Primary types - Association types descriptions

The table below is providing comments on the association types of the primary types.

Undirected associations
assClassActorDisptachCoordinator
Association of a dispatched coordinator to an actor of the same type.
assctCrisisEventctHuman
Association of a crisis event to an human.
assctCrisisEventctMapWithPin
Association of a crisis event with a MapWithPin image.
assctDispatchedCoordinatorctCrisisEvent
Association of a dispatched coordinator to a crisis event.
assDispatchedCoordinatortctMapWithPin

continues in next page . . .

... Undirected associations table continuation

Association of a dispatched coordinator with a MapWithPin image.

4.3.4 Primary types - Aggregation types descriptions

There are no aggregation types for the primary types.

4.3.4.1 Primary types - Composition types descriptions

There are no composition types for the primary types.

4.3.5 Secondary types - Class types descriptions

There are no elements in this category in the system analysed.

4.3.6 Secondary types - Datatypes types descriptions

The table below is providing comments on the graphical views given for the datatype types of the secondary types.

DATATYPES	
dtAddress	
A String used to identify an address.	
extends	dtString
operation	**is():ptBoolean**
dtCrisisID	
An Integer used to identify a crisis id.	
extends	dtInteger
operation	**is():ptBoolean**
dtImage	
A String used to identify an image.	
extends	dtString
operation	**is():ptBoolean**
dtLatitude	
used to define a latitude value of a geograpical positions on earth.	
extends	dtReal
operation	**is():ptBoolean**
dtLongitude	
used to define a longitude value of a geograpical positions on earth.	
extends	dtReal
operation	**is():ptBoolean**
dtPhoneNumber	
A String used to store a phone number.	

continues in next page ...

. . . Datatypes table continuation

extends	dtString
operation	**`is():ptBoolean`**

4.3.7 Secondary types - Association types descriptions

There are no association types for the secondary types.

4.3.8 Secondary types - Aggregation types descriptions

There are no aggregation types for the secondary types.

4.3.9 Secondary types - Composition types descriptions

There are no composition types for the secondary types.

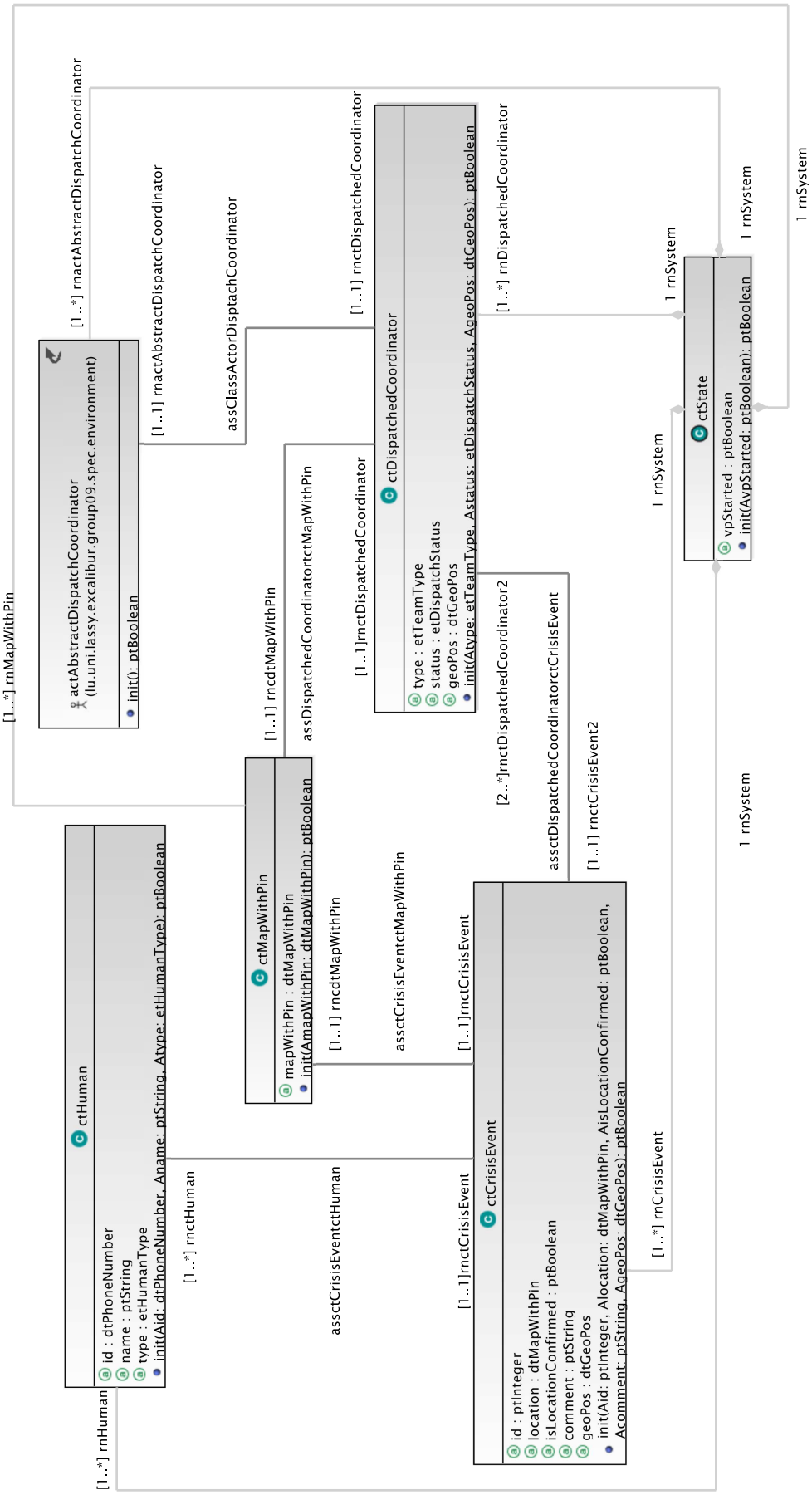

Figure 4.1: Concept Model - PrimaryTypes-Classes local view 12. .

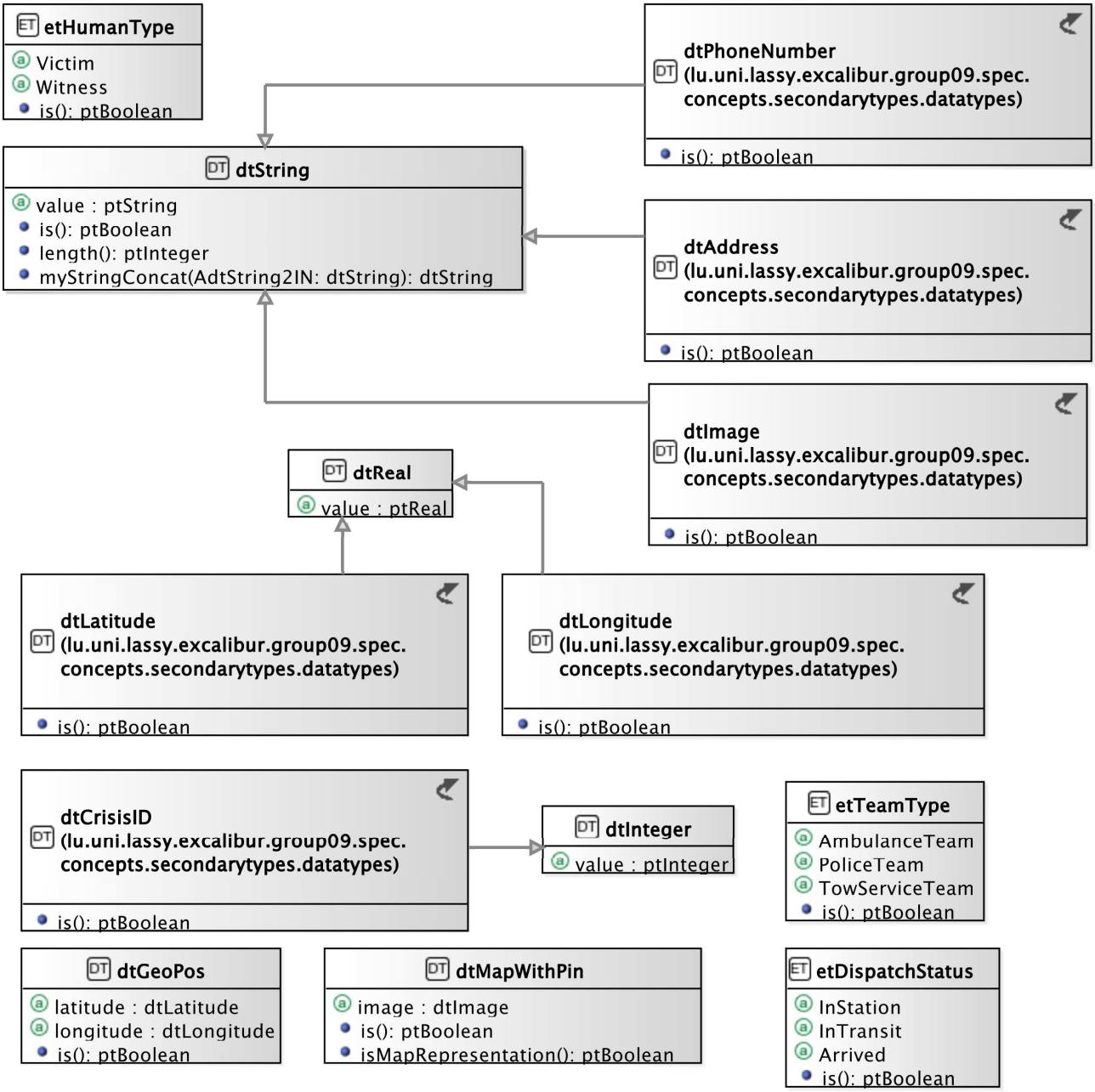

Figure 4.2: Concept Model - PrimaryTypes-Datatypes local view 15. .

Chapter 5

Operation Model

This section contains the operation schemes of each operation defined in either an actor, its output interface, in a primary or secondary type (class, datatype or enumeration types). The Messir OCL code listing is joined to the comment table.

5.1 Environment - Out Interface Operation Scheme for actCentralCoordinator

5.1.1 Operation Model for oeRequestCrisisEventLocation

The `oeRequestCrisisEventLocation` operation has the following properties:

Operation
oeRequestCrisisEventLocation sent to request a crisis event's location.
Parameters
1 **AdtPhoneNumber: dtPhoneNumber**
Return type
ptBoolean
Pre-Condition (protocol)
PreP 1
Pre-Condition (functional)
PreF 1
Post-Condition (functional)
PostF 1
Post-Condition (protocol)
PostP 1

5.2 Environment - Actor Operation Schemes

There are no elements in this category in the system analysed.

5.3 Primary Types - Operation Schemes for Classes

There are no elements in this category in the system analysed.

5.4 Primary Types - Operation Schemes for Datatypes

There are no elements in this category in the system analysed.

5.5 Primary Types - Operation Schemes for Enumerations

There are no elements in this category in the system analysed.

5.6 Secondary Types - Operation Schemes for Classes

There are no elements in this category in the system analysed.

5.7 Secondary Types - Operation Schemes for Datatypes

There are no elements in this category in the system analysed.

5.8 Secondary Types - Operation Schemes for Enumerations

There are no elements in this category in the system analysed.

Chapter 6

Test Model(s)

There are no elements in this category in the system analysed.

Chapter 7

Additional Constraints

Appendix A

Undocumented Messir Specification Elements

A.1 Undocumented Primary Types

A.1.1 Undocumented Primary Classe Types

- lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.classes.ctState

Appendix B

Messir Specification Files Listing

B.1 File ./src-gen/messir-spec/.views.msr

```
//
//DON'T TOUCH THIS FILE !!!
//
package uuidff8a216549a64951bf055c8b5a9dde2a {
 Concept Model {}
}
```

Listing B.1: Messir Spec. file .views.msr.

B.2 File ./src-gen/messir-spec/operations/environment/environment-actCentralCoordinator-oeRequestCrisisEventLocation.msr

```
package lu.uni.lassy.excalibur.group09.spec.environment.operations.actCentralCoordinator.
    outactCentralCoordinator.oeRequestCrisisEventLocation {

import lu.uni.lassy.messir.libraries.primitives
import lu.uni.lassy.messir.libraries.math
import lu.uni.lassy.messir.libraries.string
import lu.uni.lassy.messir.libraries.calendar
import lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes
import lu.uni.lassy.excalibur.group09.spec.concepts.secondarytypes.datatypes

Operation Model {

 operation: lu.uni.lassy.excalibur.group09.spec.environment.actCentralCoordinator.
     outactCentralCoordinator.oeRequestCrisisEventLocation(AdtPhoneNumber:dtPhoneNumber):ptBoolean{
 // include below the specification information (pre,post or ocl or prolog)
preP {
  let AvpStarted: ptBoolean in
  self.rnActor.rnSystem.vpStarted = AvpStarted
  and AvpStarted = true
}

preF { true }

postF {
 let TheactYou:lu.uni.lassy.excalibur.group09.spec.environment.actCentralCoordinator in
 let AptString:ptString in
 /* Post Functional:*/
 /* PostF01 */
 AptString = 'Hello World !'
 and TheactYou.InterfaceIN = self.rnActor.InterfaceIN
 and TheactYou.InterfaceIN^ieHelloWorld(AptString)
}

postP { true }
```

```
33   }
34  }
35 }
```

Listing B.2: Messir Spec. file environment-actCentralCoordinator-oeRequestCrisisEventLocation.msr.

B.3 File ./src-gen/messir-spec/environment/environment.msr

```
1 /*
2 * @author Kira
3 * @date Tue Oct 25 23:54:03 CEST 2016
4 */
5
6 package lu.uni.lassy.excalibur.group09.spec.environment {
7
8 import lu.uni.lassy.messir.libraries.calendar
9 import lu.uni.lassy.messir.libraries.math
10 import lu.uni.lassy.messir.libraries.primitives
11 import lu.uni.lassy.messir.libraries.string
12 import lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes
13 import lu.uni.lassy.excalibur.group09.spec.concepts.secondarytypes.datatypes
14
15 Environment Model {
16
17   actor actCentralCoordinator role rnactCentralCoordinator cardinality [1..*] {
18
19    operation init():ptBoolean
20
21    input interface inactCentralCoordinator {
22     operation ieReceiveCrisisEventLocation(AdtMapWithPin:dtMapWithPin) : ptBoolean
23     operation ieConfirmCrisisEventLocation(AdMessage:ptString) : ptBoolean
24     operation ieMessage(AMessage:ptString) : ptBoolean
25    }
26
27    output interface outactCentralCoordinator {
28     operation oeRequestCrisisEventLocation(AdtPhoneNumber:dtPhoneNumber) : ptBoolean
29     operation oeMessage(AMessage:ptString) : ptBoolean
30     operation oeCreateNewCrisisEvent(AdtCrisisID:dtCrisisID, AdtName:ptString, AetHumanType:
           etHumanType, AdtPhoneNumber:dtPhoneNumber, AdtMapWithPin:dtAddress,AMessage:ptString) :
           ptBoolean
31     operation oeConfirmCrisisEventLocation() : ptBoolean
32    }
33   }
34
35   actor actCommunicationCompany role rnactCommunicationCompany cardinality [1..*] {
36
37    operation init() : ptBoolean
38
39    input interface inactCommunicationCompany {
40     operation ieRequestCrisisEventLocation(AdtPhoneNumber:dtPhoneNumber) : ptBoolean
41    }
42
43    output interface outactCommunicationCompany {
44     operation oeReceiveCrisisEventLocation(AdtMapWithPin:dtMapWithPin) : ptBoolean
45    }
46   }
47
48   actor actAbstractDispatchCoordinator role rnactAbstractDispatchCoordinator cardinality [1..*] {
49
50    operation init() : ptBoolean
51
52    input interface inactAbstractDispatchCoordinator {
53     operation ieReceiveNewCrisisEvent(AdtCrisisID:dtCrisisID, AdtName:ptString, AetHumanType:
           etHumanType, AdtPhoneNumber:dtPhoneNumber, AdtMapWithPin:dtAddress, AMessage:ptString) :
           ptBoolean
54     operation ieMessage(AMessage: ptString) : ptBoolean
55     operation ieReceiveMap(AdtMapWithPin: dtMapWithPin) : ptBoolean
56    }
57
```

```
58     output interface outactAbstractDispatchCoordinator {
59      operation oeMessage(AMessage:ptString) : ptBoolean
60      operation oeUpdateDispatchStatus(AetDispatchStatus:etDispatchStatus): ptBoolean
61      operation oeRefreshMap(AdtCrisisID:dtCrisisID) : ptBoolean
62     }
63    }
64
65    actor actFiremenCoordinator role rnactFiremenCoordinator cardinality [1..*] extends
          actAbstractDispatchCoordinator {
66
67     operation init() : ptBoolean
68
69     input interface inactFiremenCoordinator {
70     }
71
72     output interface outactFiremenCoordinator {
73      operation oeRequestHelp(AetTeamType: etTeamType, ARequestedNumber:ptInteger) : ptBoolean
74     }
75    }
76
77    actor actPoliceCoordinator role rnPoliceCoordinator cardinality [1..*] extends
          actAbstractDispatchCoordinator {
78
79     operation init() : ptBoolean
80
81     input interface inactPoliceCoordinator {
82     }
83
84     output interface outactPoliceCoordinator {
85     }
86    }
87
88    actor actTowServiceCoordinator role rnTowServiceCoordinator cardinality [1..*] extends
          actAbstractDispatchCoordinator {
89
90     operation init() : ptBoolean
91
92     input interface inactTowServiceCoordinator {
93     }
94
95     output interface outactTowServiceCoordinator {
96     }
97    }
98
99 }
100 }
```

Listing B.3: Messir Spec. file environment.msr.

B.4 File ./src-gen/messir-spec/concepts/primarytypes-associations/primarytypes-associations.msr

```
1 /*
2 * @author Kira
3 * @date Tue Oct 25 23:54:03 CEST 2016
4 */
5
6 package lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.associations {
7
8 import lu.uni.lassy.messir.libraries.calendar
9 import lu.uni.lassy.messir.libraries.math
10 import lu.uni.lassy.messir.libraries.primitives
11 import lu.uni.lassy.messir.libraries.string
12 import lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.classes
13 import lu.uni.lassy.excalibur.group09.spec.environment
14
15 Concept Model {
16
```

```
17 Primary Types {
18
19  association assctCrisisEventctHuman
20   ctCrisisEvent(rnctCrisisEvent)[1..1]
21   ctHuman(rnctHuman)[1..*]
22
23  association assctCrisisEventctMapWithPin
24   ctCrisisEvent(rnctCrisisEvent)[1..1]
25   ctMapWithPin(rncdtMapWithPin)[1..1]
26
27  association assDispatchedCoordinatortctMapWithPin
28   ctDispatchedCoordinator(rnctDispatchedCoordinator)[1..1]
29   ctMapWithPin(rncdtMapWithPin)[1..1]
30
31  association assClassActorDisptachCoordinator
32   ctDispatchedCoordinator(rnctDispatchedCoordinator)[1..1]
33   actAbstractDispatchCoordinator(rnactAbstractDispatchCoordinator)[1..1]
34
35  association assctDispatchedCoordinatorctCrisisEvent
36   ctDispatchedCoordinator(rnctDispatchedCoordinator2)[2..*]
37   ctCrisisEvent(rnctCrisisEvent2)[1..1]
38
39 }
40 }
41 }
```

Listing B.4: Messir Spec. file primarytypes-associations.msr.

B.5 File ./src-gen/messir-spec/concepts/primarytypes-classes/primarytypes-classes.msr

```
1 /*
2 * @author Kira
3 * @date Tue Oct 25 23:54:03 CEST 2016
4 */
5
6 package lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.classes {
7
8 import lu.uni.lassy.messir.libraries.calendar
9 import lu.uni.lassy.messir.libraries.math
10 import lu.uni.lassy.messir.libraries.primitives
11 import lu.uni.lassy.messir.libraries.string
12 import lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes
13 import lu.uni.lassy.excalibur.group09.spec.concepts.secondarytypes.datatypes
14
15 import lu.uni.lassy.messir.libraries.primitives
16
17 Concept Model {
18
19  Primary Types {
20
21   state class ctState {
22    attribute vpStarted: ptBoolean
23
24    operation init(AvpStarted:ptBoolean): ptBoolean
25   }
26
27   class ctHuman role rnHuman cardinality [1..*] {
28    attribute id: dtPhoneNumber
29    attribute name: ptString
30    attribute type: etHumanType
31
32    operation init( Aid:dtPhoneNumber,
33        Aname:ptString,
34        Atype:etHumanType
35    ): ptBoolean
36
37   }
```

```
38
39  class ctCrisisEvent role rnCrisisEvent cardinality [1..*] {
40   attribute id: ptInteger
41   attribute location: dtMapWithPin
42   attribute isLocationConfirmed: ptBoolean
43   attribute comment: ptString     //Multiple Comments?
44   attribute geoPos: dtGeoPos
45
46   operation init( Aid:ptInteger,
47       Alocation:dtMapWithPin,
48       AisLocationConfirmed:ptBoolean,
49       Acomment:ptString,
50       AgeoPos:dtGeoPos
51   ): ptBoolean
52
53  }
54
55  class ctDispatchedCoordinator role rnDispatchedCoordinator cardinality [1..*] {
56   attribute type: etTeamType
57   attribute status: etDispatchStatus
58   attribute geoPos: dtGeoPos
59
60   operation init( Atype:etTeamType,
61       Astatus:etDispatchStatus,
62       AgeoPos:dtGeoPos
63   ): ptBoolean
64  }
65
66  class ctMapWithPin role rnMapWithPin cardinality [1..*] {
67   attribute mapWithPin: dtMapWithPin
68
69   operation init( AmapWithPin:dtMapWithPin
70   ) : ptBoolean
71  }
72
73 }
74}
75}
```

Listing B.5: Messir Spec. file primarytypes-classes.msr.

B.6 File ./src-gen/messir-spec/concepts/primarytypes-datatypes/primarytypes-datatypes.msr

```
1 /*
2 * @author Kira
3 * @date Tue Oct 25 23:54:03 CEST 2016
4 */
5
6 package lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes {
7
8 import lu.uni.lassy.messir.libraries.calendar
9 import lu.uni.lassy.messir.libraries.math
10 import lu.uni.lassy.messir.libraries.primitives
11 import lu.uni.lassy.messir.libraries.string
12 import lu.uni.lassy.excalibur.group09.spec.concepts.secondarytypes.datatypes
13
14 Concept Model {
15
16  Primary Types {
17
18   datatype dtString {
19    attribute value : ptString
20    operation is() : ptBoolean
21    operation length(): ptInteger
22    operation myStringConcat(AdtString2IN:dtString): dtString
23   }
24
```

```
25   datatype dtInteger {
26    attribute value : ptInteger
27   }
28
29   datatype dtReal {
30    attribute value : ptReal
31   }
32
33    datatype dtMapWithPin{
34      attribute image : dtImage
35      operation is() : ptBoolean
36      external operation isMapRepresentation() : ptBoolean
37    }
38
39    datatype dtGeoPos{
40      attribute latitude: dtLatitude
41      attribute longitude: dtLongitude
42      operation is() : ptBoolean
43    }
44
45    enum etDispatchStatus {
46      constants["InStation", "InTransit", "Arrived"]
47      operation is() : ptBoolean
48    }
49
50    enum etHumanType {
51      constants["Victim", "Witness"]
52      operation is() : ptBoolean
53    }
54
55    enum etTeamType {
56      constants["AmbulanceTeam", "PoliceTeam", "TowServiceTeam"]
57      operation is() : ptBoolean
58    }
59  }
60 }
61 }
```

Listing B.6: Messir Spec. file primarytypes-datatypes.msr.

B.7 File ./src-gen/messir-spec/concepts/secondarytypes-associations/secondarytypes-associations.msr

```
1 /*
2 * @author Kira
3 * @date Tue Oct 25 23:54:03 CEST 2016
4 */
5
6 package lu.uni.lassy.excalibur.group09.spec.concepts.secondarytypes.associations {
7
8 import lu.uni.lassy.messir.libraries.calendar
9 import lu.uni.lassy.messir.libraries.math
10 import lu.uni.lassy.messir.libraries.primitives
11 import lu.uni.lassy.messir.libraries.string
12
13 Concept Model {
14
15  Secondary Types {
16
17  }
18 }
19 }
```

Listing B.7: Messir Spec. file secondarytypes-associations.msr.

B.8 File ./src-gen/messir-spec/concepts/secondarytypes-classes/secondarytypes-classes.msr

```
/*
* @author Kira
* @date Tue Oct 25 23:54:03 CEST 2016
*/

package lu.uni.lassy.excalibur.group09.spec.concepts.secondarytypes.classes {

import lu.uni.lassy.messir.libraries.calendar
import lu.uni.lassy.messir.libraries.math
import lu.uni.lassy.messir.libraries.primitives
import lu.uni.lassy.messir.libraries.string

Concept Model {

 Secondary Types {

 }
}
}
```

Listing B.8: Messir Spec. file secondarytypes-classes.msr.

B.9 File ./src-gen/messir-spec/concepts/secondarytypes-datatypes/secondarytypes-datatypes.msr

```
/*
* @author Kira
* @date Tue Oct 25 23:54:03 CEST 2016
*/

package lu.uni.lassy.excalibur.group09.spec.concepts.secondarytypes.datatypes {

import lu.uni.lassy.messir.libraries.calendar
import lu.uni.lassy.messir.libraries.math
import lu.uni.lassy.messir.libraries.primitives
import lu.uni.lassy.messir.libraries.string
import lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes

Concept Model {

 Secondary Types {

  datatype dtPhoneNumber extends lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes
      .dtString {
    operation is() : ptBoolean
   }

  datatype dtAddress extends lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes.
      dtString {
    operation is() : ptBoolean
   }

  datatype dtCrisisID extends lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes.
      dtInteger {
    operation is() : ptBoolean
   }

  datatype dtLongitude extends lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes.
      dtReal {
     operation is() : ptBoolean
    }

  datatype dtLatitude extends lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes.
      dtReal {
```

```
35      operation is() : ptBoolean
36    }
37
38   datatype dtImage extends lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes.
         dtString {
39      operation is() : ptBoolean
40    }
41  }
42
43 }
44 }
```

Listing B.9: Messir Spec. file secondarytypes-datatypes.msr.

B.10 File ./src-gen/messir-spec/tests/tests.msr

```
1 /*
2 * @author Kira
3 * @date Tue Oct 25 23:54:03 CEST 2016
4 */
5
6 package lu.uni.lassy.excalibur.group09.spec.tests {
7
8 import lu.uni.lassy.messir.libraries.calendar
9 import lu.uni.lassy.messir.libraries.math
10 import lu.uni.lassy.messir.libraries.primitives
11 import lu.uni.lassy.messir.libraries.string
12
13  Test Model {
14
15  }
16
17 }
```

Listing B.10: Messir Spec. file tests.msr.

B.11 File ./src-gen/messir-spec/usecases/usecaseinstance-suGlobalManagementOfEvent-ucisuGlobalManagementOfEvent.msr

```
1 package usecases.ucisuGlobalManagementOfEvent {
2  import lu.uni.lassy.excalibur.group09.spec.usecases
3  import lu.uni.lassy.excalibur.group09.spec.environment
4  import lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes
5
6  Use Case Model {
7
8   use case instance ucisuGlobalManagementOfEvent : suGlobalManagementOfEvent{
9    actors {
10    Camille : actCentralCoordinator
11    Orange : actCommunicationCompany
12    Fabio : actFiremenCoordinator
13    Ted : actTowServiceCoordinator
14    Polo : actPoliceCoordinator
15   }
16
17   use case steps {
18
19    Camille executed instanceof ugCreateNewCrisisEvent() {
20      use case steps {
21       Camille executed instanceof subfunction oeRequestCrisisEventLocation("AdtPhoneNumber
             =691123456") {
22        ieRequestCrisisEventLocation("691123456") returned to Orange
23       }
24
25       Orange executed instanceof subfunction oeReceiveCrisisEventLocation("AdtMapWithPin=http
             ://..., X=75.08, Y=23.03") {
26        ieReceiveCrisisEventLocation("http://..., X=75.08, Y=23.03") returned to Camille
```

```
27        }
28
29        Camille executed instanceof subfunction oeConfirmCrisisEventLocation() {
30         ieConfirmCrisisEventLocation("Done") returned to Camille
31        }
32
33        Camille executed instanceof subfunction oeCreateNewCrisisEvent("AdtCrisisID=1", "AdtName=
              Walter", "AenHumanType=Witness", "AdtPhoneNumberX=691123456", "AdtMapWithPin=http://...,
              X=75.08, Y=23.03", "No additional comments") {
34         ieReceiveNewCrisisEvent("1","Walter","Witness","691123456","http://..., X=75.08, Y=23.03","
               No additional comments") returned to Fabio
35         ieReceiveNewCrisisEvent("1","Walter","Witness","691123456","http://..., X=75.08, Y=23.03","
               No additional comments") returned to Ted
36        }
37       }
38      }
39
40     Fabio executed instanceof ugGlobalDispatchManagement() {
41       use case steps {
42        Fabio executed instanceof subfunction oeUpdateDispatchStatus(AenDispatchStatus="InTransit") {
43         ieMessage("Dispatch Status Updated.") returned to Fabio
44        }
45
46        Ted executed instanceof subfunction oeRefreshMap("AdtCrisisID=1") {
47         ieReceiveMap("http://..., X=75.08, Y=23.03") returned to Ted
48        }
49
50        Ted executed instanceof subfunction oeMessage("AMessage=I will arrive in 30 minutes") {
51         ieMessage("I will arrive in 30 minutes") returned to Camille
52         ieMessage("I will arrive in 30 minutes") returned to Fabio
53         ieMessage("I will arrive in 30 minutes") returned to Ted
54        }
55
56        Ted executed instanceof subfunction oeUpdateDispatchStatus(AenDispatchStatusX="InTransit") {
57         ieMessage("Dispatch Status Updated.") returned to Ted
58        }
59
60        Fabio executed instanceof subfunction oeUpdateDispatchStatus(AenDispatchStatusXX="Arrived") {
61         ieMessage("Dispatch Status Updated.") returned to Fabio
62        }
63
64        Fabio executed instanceof subfunction oeRequestHelp(AenTeamType="Police", RequestedNumber="1"
              ) {
65         ieReceiveNewCrisisEvent("1","Walter","Witness","691123456","http://..., X=75.08, Y=23.03")
               returned to Polo
66        }
67
68        Polo executed instanceof subfunction oeUpdateDispatchStatus(AenDispatchStatusXXX="InTransit")
               {
69         ieMessage("Dispatch Status Updated.") returned to Polo
70        }
71
72        Ted executed instanceof subfunction oeUpdateDispatchStatus(AenDispatchStatusXXXX="Arrived") {
73         ieMessage("Dispatch Status Updated.") returned to Ted
74        }
75
76        Polo executed instanceof subfunction oeUpdateDispatchStatus(AenDispatchStatusXXXXX="Arrived")
               {
77         ieMessage("Dispatch Status Updated.") returned to Polo
78        }
79       }
80      }
81
82    }
83   }
84  }
85 }
```

Listing B.11: Messir Spec. file usecaseinstance-suGlobalManagementOfEvent-ucisuGlobalManagementOfEvent.msr.

B.12 File ./src-gen/messir-spec/usecases/usecaseinstance-ugCreateNewCrisisEvent-uciugCreateNewCrisisEvent.msr

```
1 package usecases.uciugCreateNewCrisisEvent {
2  import lu.uni.lassy.excalibur.group09.spec.usecases
3  import lu.uni.lassy.excalibur.group09.spec.usecases
4  import lu.uni.lassy.excalibur.group09.spec.environment
5  import lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes
6
7  Use Case Model {
8
9  }
10 }
```

Listing B.12: Messir Spec. file usecaseinstance-ugCreateNewCrisisEvent-uciugCreateNewCrisisEvent.msr.

B.13 File ./src-gen/messir-spec/usecases/usecaseinstance-ugGlobalDispatchManagement-uciugGlobalDispatchManagement.msr

```
1 package usecases.uciugGlobalDispatchManagement {
2  import lu.uni.lassy.excalibur.group09.spec.usecases
3  import lu.uni.lassy.excalibur.group09.spec.usecases
4  import lu.uni.lassy.excalibur.group09.spec.environment
5  import lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes
6
7  Use Case Model {
8
9  }
10 }
```

Listing B.13: Messir Spec. file usecaseinstance-ugGlobalDispatchManagement-uciugGlobalDispatchManagement.msr.

B.14 File ./src-gen/messir-spec/usecases/usecases.msr

```
1 /*
2 * @author Kira
3 * @date Tue Oct 25 23:54:03 CEST 2016
4 */
5
6 package lu.uni.lassy.excalibur.group09.spec.usecases {
7
8 import lu.uni.lassy.messir.libraries.calendar
9 import lu.uni.lassy.messir.libraries.math
10 import lu.uni.lassy.messir.libraries.primitives
11 import lu.uni.lassy.messir.libraries.string
12 import lu.uni.lassy.excalibur.group09.spec.environment
13 import lu.uni.lassy.excalibur.group09.spec.concepts.primarytypes.datatypes
14 import lu.uni.lassy.excalibur.group09.spec.concepts.secondarytypes.datatypes
15
16  Use Case Model {
17
18   use case system summary suGlobalManagementOfEvent() {
19     actor actCentralCoordinator[primary, active]
20     actor actCommunicationCompany[secondary, active]
21     actor actFiremenCoordinator[secondary,active]
22     actor actTowServiceCoordinator[secondary,active]
23     actor actPoliceCoordinator[secondary,active]
24
25     step a: actCentralCoordinator executes ugCreateNewCrisisEvent
26     step b: actFiremenCoordinator executes ugGlobalDispatchManagement
27     step c: actTowServiceCoordinator executes ugGlobalDispatchManagement
28
```

```
29    ordering constraint "step (a) must be executed before step (b) or step (c)"
30    ordering constraint "step (b) XOR step (c)"
31
32  }
33
34   use case system usergoal ugCreateNewCrisisEvent() {
35    actor actCentralCoordinator[primary, active]
36    actor actCommunicationCompany[secondary, active]
37
38    reuse oeRequestCrisisEventLocation[0..*]
39    reuse oeReceiveCrisisEventLocation[0..*]
40    reuse oeConfirmCrisisEventLocation[1..*]
41    reuse oeCreateNewCrisisEvent[1..*]
42
43    step a: actCentralCoordinator executes oeRequestCrisisEventLocation
44    step b: actCommunicationCompany executes oeReceiveCrisisEventLocation
45    step c: actCentralCoordinator executes oeConfirmCrisisEventLocation
46    step d: actCentralCoordinator executes oeCreateNewCrisisEvent
47
48    ordering constraint "if (b) then previously (a)"
49    ordering constraint "step (c) must be executed before step (d)"
50
51  }
52
53  use case system usergoal ugGlobalDispatchManagement() {
54    actor actFiremenCoordinator[primary, active]
55    actor actFiremenCoordinator[secondary,active]
56    actor actTowServiceCoordinator[secondary,active]
57    actor actPoliceCoordinator[secondary,active]
58
59    step a: actFiremenCoordinator executes oeUpdateDispatchStatus
60    step b: actTowServiceCoordinator executes oeRefreshMap
61    step c: actTowServiceCoordinator executes oeMessage
62    step d: actTowServiceCoordinator executes oeUpdateDispatchStatus
63    step e: actFiremenCoordinator executes oeRequestHelp
64    step f: actPoliceCoordinator executes oeUpdateDispatchStatus
65
66    ordering constraint "step (a) must be executed at least two times"
67    ordering constraint "step (d) must be executed at least two times"
68    ordering constraint "step (f) can only be executed if step (e) has at least been executed once
          previously"
69    ordering constraint "step (f) must be executed at least two times"
70  }
71
72  use case system subfunction oeRequestCrisisEventLocation(AdtPhoneNumber:dtPhoneNumber) {
73   actor actCentralCoordinator[primary,active]
74   actor actCommunicationCompany[secondary, passive]
75   returned messages{
76    ieRequestCrisisEventLocation(AdtPhoneNumber) returned to actCommunicationCompany //Slide 208..
77   }
78  }
79
80  use case system subfunction oeReceiveCrisisEventLocation(AdtMapWithPin:dtMapWithPin) {
81   actor actCommunicationCompany[primary, active]
82   actor actCentralCoordinator[secondary, passive]
83   returned messages{
84    ieReceiveCrisisEventLocation(AdtMapWithPin) returned to actCentralCoordinator
85   }
86  }
87
88  use case system subfunction oeConfirmCrisisEventLocation() {
89   actor actCentralCoordinator[primary, active]
90   returned messages{
91    ieConfirmCrisisEventLocation() returned to actCentralCoordinator
92   }
93  }
94
95  use case system subfunction oeCreateNewCrisisEvent(AdtCrisisID:dtCrisisID, AdtName:ptString,
        AetHumanType:etHumanType, AdtPhoneNumber:dtPhoneNumber, AdtMapWithPin:dtMapWithPin, AMessage:
        ptString) {
```

```
96    actor actCentralCoordinator[primary,active]
97    actor actAbstractDispatchCoordinator[secondary,passive]
98    returned messages{
99     ieReceiveNewCrisisEvent(AdtCrisisID, AdtName, AetHumanType, AdtPhoneNumber, AdtMapWithPin,
           AMessage) returned to actAbstractDispatchCoordinator
100   }
101  }
102
103  use case system subfunction oeMessage(AMessage:ptString) {
104   actor actAbstractDispatchCoordinator[primary,active]
105   actor actCentralCoordinator[secondary, passive]
106   actor actAbstractDispatchCoordinator[secondary, multiple]
107   returned messages{
108    ieMessage(AMessage) returned to actAbstractDispatchCoordinator
109 //    ieMessage(AMessage) returned to actCentralCoordinator  6          //PROBLEME DE IE DEUX FOIS
       SANS SOUS-TYPAGE
110   }
111  }
112
113  use case system subfunction oeUpdateDispatchStatus(AetDispatchStatus:etDispatchStatus){
114   actor actAbstractDispatchCoordinator[primary,active]
115   returned messages{
116    ieMessage(AMessage) returned to actAbstractDispatchCoordinator
117   }
118  }
119
120  use case system subfunction oeRefreshMap(AdtCrisisID:dtCrisisID){
121   actor actAbstractDispatchCoordinator[primary,active]
122   returned messages{
123    ieReceiveMap(AdtMapWithPin) returned to actAbstractDispatchCoordinator
124   }
125  }
126
127  use case system subfunction oeRequestHelp(AetTeamType: etTeamType, RequestedNumber:ptInteger) {
128   actor actFiremenCoordinator[primary,active]
129   actor actAbstractDispatchCoordinator[secondary,passive]
130   returned messages{
131    ieReceiveNewCrisisEvent(AdtCrisisID, AdtName, AetHumanType, AdtPhoneNumber, AdtMapWithPin,
           AMessage) returned to actAbstractDispatchCoordinator
132   }
133  }
134
135 }
136
137 }
```

Listing B.14: Messir Spec. file usecases.msr.

Bibliography

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[2] Armour, F., Miller, G.: Advanced Use Case Modeling: Software Systems. Addison-Wesley (2001)