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MyProjectName : Your Title
Messir Analysis Document
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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 [**?**] 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 [**?**].

2.3.1 Use Cases

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

2.3.2 Use Case Instance(s)

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

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

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

Chapter 4

Concept Model

4.1 Concept Model view(s)

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

4.2 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.

4.2.1 Primary types - Class types descriptions

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

4.2.2 Primary types - Datatypes types descriptions

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

4.2.3 Primary types - Association types descriptions

There are no association types for the primary types.

4.2.4 Primary types - Aggregation types descriptions

There are no aggregation types for the primary types.

4.2.4.1 Primary types - Composition types descriptions

There are no composition types for the primary types.

4.2.5 Secondary types - Class types descriptions

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

4.2.6 Secondary types - Datatypes types descriptions

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

4.2.7 Secondary types - Association types descriptions

There are no association types for the secondary types.

4.2.8 Secondary types - Aggregation types descriptions

There are no aggregation types for the secondary types.

4.2.9 Secondary types - Composition types descriptions

There are no composition types for the secondary types.

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 Schemes

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

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 Use Cases

A.1.1 Undocumented User-Goal Level Use Cases

- lu.uni.lassy.excalibur.myproject.usecases.ugViewBalance
- lu.uni.lassy.excalibur.myproject.usecases.ugWithdraw

A.1.2 Undocumented Subfunction Level Use Cases

- lu.uni.lassy.excalibur.myproject.usecases.oeChooseCurrency
- lu.uni.lassy.excalibur.myproject.usecases.oeEnterPinCode
- lu.uni.lassy.excalibur.myproject.usecases.oeEnterTheAmountOfMoney
- lu.uni.lassy.excalibur.myproject.usecases.oeLogout

A.1.3 Undocumented Use Case Views

- ugViewBalance
- ugWithdraw

A.2 Undocumented Use Case Instances

A.2.1 Undocumented User-Goal Level Use Case Instances

- usecases.uciugViewBalance.uciugViewBalance
- usecases.uciugViewBalance.uciugWithdraw

A.2.2 Undocumented Use Case Instance Views

- uciugViewBalance
- uciugWithdraw

A.3 Undocumented Actors

- lu.uni.lassy.excalibur.myproject.environment.actUser

A.4 Undocumented Primary Types

A.4.1 Undocumented Primary Classe Types

- lu.uni.lassy.excalibur.myproject.concepts.primarytypes.classes.ctState

A.4.2 Undocumented Primary Datatype Types

- lu.uni.lassy.excalibur.myproject.concepts.primarytypes.datatypes.dtAmount
- lu.uni.lassy.excalibur.myproject.concepts.primarytypes.datatypes.dtPinCode

A.4.3 Undocumented Primary Enumeration Types

- lu.uni.lassy.excalibur.myproject.concepts.primarytypes.datatypes.enCurrency

A.5 Undocumented Operation Specifications

- lu.uni.lassy.excalibur.myproject.concepts.primarytypes.datatypes.dtAmount.is
- lu.uni.lassy.excalibur.myproject.concepts.primarytypes.datatypes.dtPinCode.is
- lu.uni.lassy.excalibur.myproject.environment.actUser.outactUser.oeChooseCurrency
- lu.uni.lassy.excalibur.myproject.environment.actUser.outactUser.oeEnterPinCode
- lu.uni.lassy.excalibur.myproject.environment.actUser.outactUser.oeEnterTheAmountOfMoney
- lu.uni.lassy.excalibur.myproject.environment.actUser.outactUser.oeLogout

Appendix B

Messir Specification Files Listing

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

```
//
//DON'T TOUCH THIS FILE !!!
//
package uuid8ce2ab97cedc43e6bf98408401c259c7 {
 Concept Model {}
}
```

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

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

```

/*
* @author timur
* @date Fri Feb 10 20:42:17 MSK 2017
*/
package lu.uni.lassy.excalibur.myproject.environment {
 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.myproject.concepts.primarytypes.datatypes

 Environment Model {
  actor actUser role rnactUser cardinality[0 .. *] {
   input interface inactUser {
    operation ieMessage(AMessage:ptString):ptBoolean
    operation ieMoneyAppeared():ptBoolean
    operation ieCardAppeared():ptBoolean
   }
   output interface outactUser {
    operation oeEnterPinCode(pinCode:dtPinCode):ptBoolean
    operation oeChooseCurrency(currency:enCurrency):ptBoolean
    operation oeEnterTheAmountOfMoney(amount:dtAmount):ptBoolean
    operation oeLogout():ptBoolean
   }
  }
  //  actor actBank role rnactBank cardinality[1 .. 1] {

  //   input interface inactBank {

  //   }

  //   output interface outactBank {

  //   }

```

```
37   //  }
38
39  }
40 }
```

Listing B.2: Messir Spec. file environment.msr.

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

```
 1
 2 /*
 3 * @author timur
 4 * @date Sat Feb 11 16:52:23 MSK 2017
 5 */
 6 package lu.uni.lassy.excalibur.myproject.operations {
 7  import lu.uni.lassy.messir.libraries.calendar
 8  import lu.uni.lassy.messir.libraries.math
 9  import lu.uni.lassy.messir.libraries.primitives
10  import lu.uni.lassy.messir.libraries.string
11  import lu.uni.lassy.excalibur.myproject.environment
12  import lu.uni.lassy.excalibur.myproject.concepts.primarytypes.datatypes
13
14  Operation Model {
15
16   operation: lu.uni.lassy.excalibur.myproject.concepts.primarytypes.datatypes.dtPinCode.is():
         ptBoolean {
17    postF {
18     if(1000 <= self.value and self.value <= 9999)
19     then(result = true)
20     else(result = false)
21     endif
22
23  }
24 }
25
26 }
27
28 }
```

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

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

```
 1 /*
 2 * @author timur
 3 * @date Fri Feb 10 20:42:17 MSK 2017
 4 */
 5
 6 package lu.uni.lassy.excalibur.myproject.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
13 Concept Model {
14
15  Primary Types {
16
17  }
18 }
19 }
```

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

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

```
/*
* @author timur
* @date Fri Feb 10 20:42:17 MSK 2017
*/

package lu.uni.lassy.excalibur.myproject.concepts.primarytypes.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

import lu.uni.lassy.messir.libraries.primitives

Concept Model {

 Primary Types {

  state class ctState {
   attribute vpStarted: ptBoolean

   operation init(AvpStarted:ptBoolean): ptBoolean
  }

 }
}
}
```

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

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

```

/*
* @author timur
* @date Fri Feb 10 20:42:17 MSK 2017
*/
package lu.uni.lassy.excalibur.myproject.concepts.primarytypes.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

 Concept Model {
  Primary Types {
   datatype dtPinCode extends dtInteger {
    attribute value:ptInteger
    operation is():ptBoolean
   }
   datatype dtAmount extends dtInteger {
    attribute value:ptInteger
    operation is() : ptBoolean
   }
   enum enCurrency {
    constants["USD", "RUB"]
   }
  }
 }
}
```

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 timur
3 * @date Fri Feb 10 20:42:17 MSK 2017
4 */
5
6 package lu.uni.lassy.excalibur.myproject.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

```
1 /*
2 * @author timur
3 * @date Fri Feb 10 20:42:17 MSK 2017
4 */
5
6 package lu.uni.lassy.excalibur.myproject.concepts.secondarytypes.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
13 Concept Model {
14
15  Secondary Types {
16
17  }
18 }
19 }
```

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

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

```
1 /*
2 * @author timur
3 * @date Fri Feb 10 20:42:17 MSK 2017
4 */
5
6 package lu.uni.lassy.excalibur.myproject.concepts.secondarytypes.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
13 Concept Model {
14
15  Secondary Types {
16
17  }
18
19 }
20 }
```

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

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

```
1 /*
2 * @author timur
3 * @date Fri Feb 10 20:42:17 MSK 2017
4 */
5
6 package lu.uni.lassy.excalibur.myproject.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-ugViewBalance-uciugViewBalance.msr

```
1 package usecases.uciugViewBalance {
2  import lu.uni.lassy.excalibur.myproject.usecases
3  import lu.uni.lassy.excalibur.myproject.environment
4
5  Use Case Model {
6
7   use case instance uciugViewBalance:ugViewBalance {
8    actors {
9     user1:actUser
10   }
11   use case steps {
12    user1 executed instanceof subfunction oeEnterPinCode("1357") {
13     ieMessage("The pin code is correct. Welcome!") returned to user1
14    }
15    user1 executed instanceof subfunction oeChooseCurrency("USD") {
16     ieMessage("Your balance is 40$.") returned to user1
17    }
18    user1 executed instanceof subfunction oeLogout() {
19     ieMessage("You are logged out. Take your card!") returned to user1
20     ieCardAppeared() returned to user1
21    }
22   }
23  }
24
25   use case instance uciugWithdraw:ugWithdraw {
26    actors {
27     user1:actUser
28    }
29    use case steps {
30     user1 executed instanceof subfunction oeEnterPinCode("2468") {
```

```
31      ieMessage("The pin code is correct. Welcome!") returned to user1
32     }
33     user1 executed instanceof subfunction oeChooseCurrency("USD") {
34      ieMessage("Enter the amount of money you want to withdraw") returned to user1
35     }
36     user1 executed instanceof subfunction oeEnterTheAmountOfMoney("35") {
37      ieMessage("There is enough money on you card. Please take them...") returned to user1
38      ieMoneyAppeared() returned to user1
39     }
40     user1 executed instanceof subfunction oeLogout() {
41      ieMessage("You are logged out. Take your card!") returned to user1
42      ieCardAppeared() returned to user1
43     }
44    }
45   }
46  }
47 }
```

Listing B.11: Messir Spec. file usecaseinstance-ugViewBalance-uciugViewBalance.msr.

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

```
1
2 /*
3 * @author timur
4 * @date Fri Feb 10 20:42:17 MSK 2017
5 */
6 package lu.uni.lassy.excalibur.myproject.usecases {
7  import lu.uni.lassy.messir.libraries.calendar
8  import lu.uni.lassy.messir.libraries.math
9  import lu.uni.lassy.messir.libraries.primitives
10  import lu.uni.lassy.messir.libraries.string
11
12  import lu.uni.lassy.excalibur.myproject.environment
13
14  Use Case Model {
15
16   use case system subfunction oeEnterPinCode() {
17    actor actUser[primary,active]
18 //    actor actBank[secondary]
19    returned messages {
20     ieMessage(AMessage) returned to actUser
21    }
22   }
23
24   use case system subfunction oeChooseCurrency() {
25    actor actUser[primary,active]
26    returned messages {
27     ieMessage(AMessage) returned to actUser
28    }
29   }
30
31 //   use case system subfunction sfDisplayBalanceInChosenCurrency() {
32 //    actor actBank[primary,active]
33 //   }
34
35   use case system subfunction oeLogout() {
36    actor actUser[primary,active]
37    returned messages {
38     ieMessage(AMessage) returned to actUser
39     ieCardAppeared() returned to actUser
40    }
41   }
42
43   use case system usergoal ugViewBalance() {
44    actor actUser[primary,active]
45    reuse oeEnterPinCode[1..3]
46    reuse oeChooseCurrency[1..1]
47    reuse oeLogout[1..1]
```

```
48 //   reuse sfDisplayBalanceInChosenCurrency[1..1]
49
50   step a: actUser executes oeEnterPinCode()
51
52   step b: actUser executes oeChooseCurrency()
53
54   step c: actUser executes oeLogout()
55
56 //   step c: actBank executes sfDisplayBalanceInChosenCurrency()
57  }
58
59  use case system subfunction oeEnterTheAmountOfMoney() {
60   actor actUser[primary,active]
61   returned messages {
62    ieMessage(AMessage) returned to actUser
63    ieMoneyAppeared() returned to actUser
64   }
65  }
66
67  use case system usergoal ugWithdraw() {
68   actor actUser[primary,active]
69   reuse oeEnterPinCode[1..3]
70   reuse oeChooseCurrency[1..1]
71   reuse oeEnterTheAmountOfMoney[1..1]
72   reuse oeLogout[1..1]
73
74   step a: actUser executes oeEnterPinCode()
75
76   step b: actUser executes oeChooseCurrency()
77
78   step c: actUser executes oeEnterTheAmountOfMoney()
79
80   step d: actUser executes oeLogout()
81
82  }
83 }
84 }
```

Listing B.12: Messir Spec. file usecases.msr.