Pascal Roques Formation & Conseil

Clarity

Ecosystem for the
Model Based Systems Engineering
Solution Capella

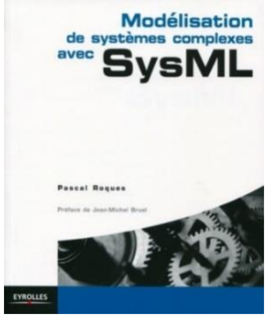
Exemple du Radio-réveil - 02/2016

Pascal Roques – 02/2016

Présentations

www.prfc.fr

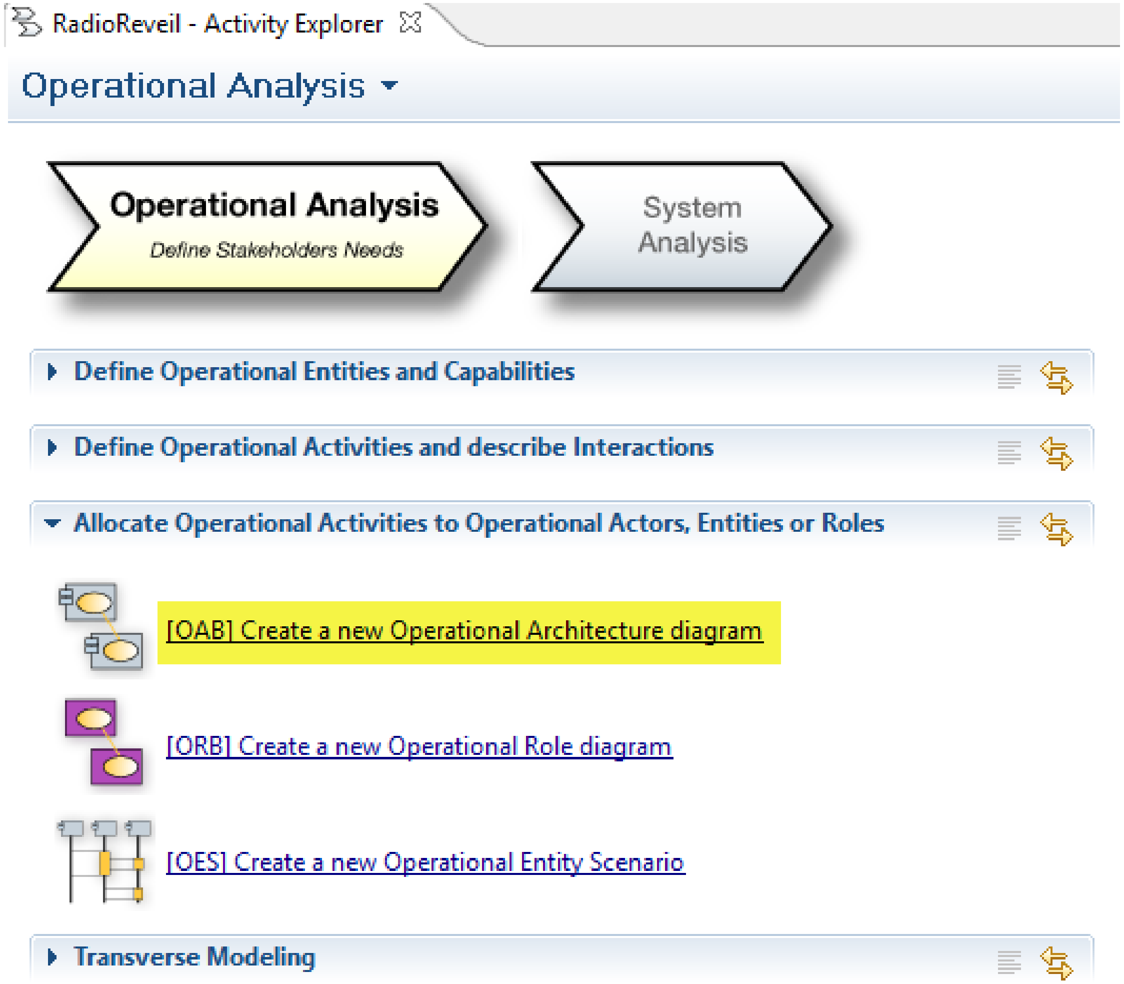
- Pascal Roques : consultant senior, 25+ ans d'expérience
  - SADT, OMT, UML, SysML, ARCADIA
- Certifié UML2 et SysML par l'OMG
- Co-fondateur de l'association
- Formateur pour Thales sur ARCADIA / Melody
  - 90+ sessions, 1100+ stagiaires formés
  - Partie prenante du projet Clarity
- Auteur des ouvrages les plus lus en France sur UML … et du premier livre sur SysML


Modélisation de systèmes complexes avec SysML

Pascal Roques

EYROLLES

Analyse Opérationnelle (OA)



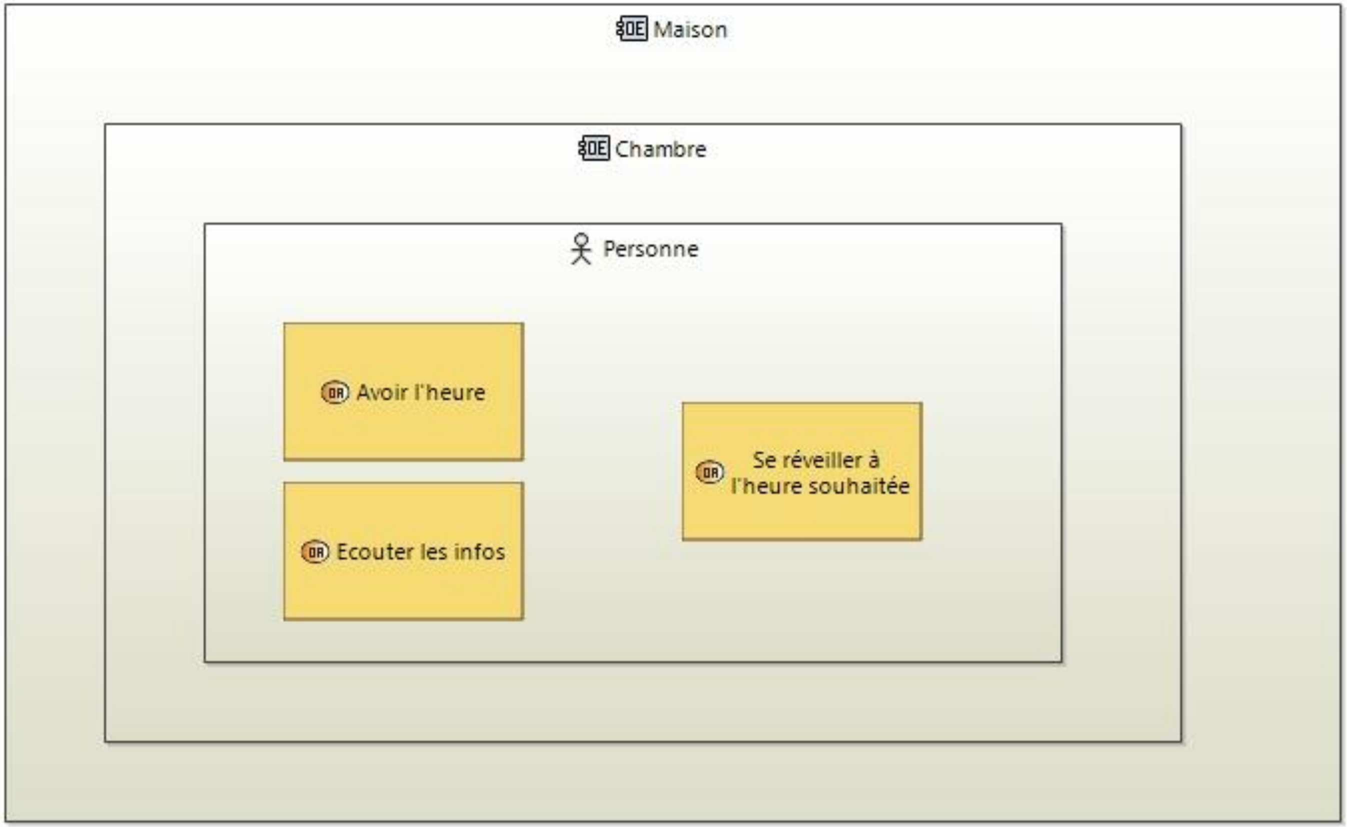
RadioReveil - Activity Explorer

Operational Analysis

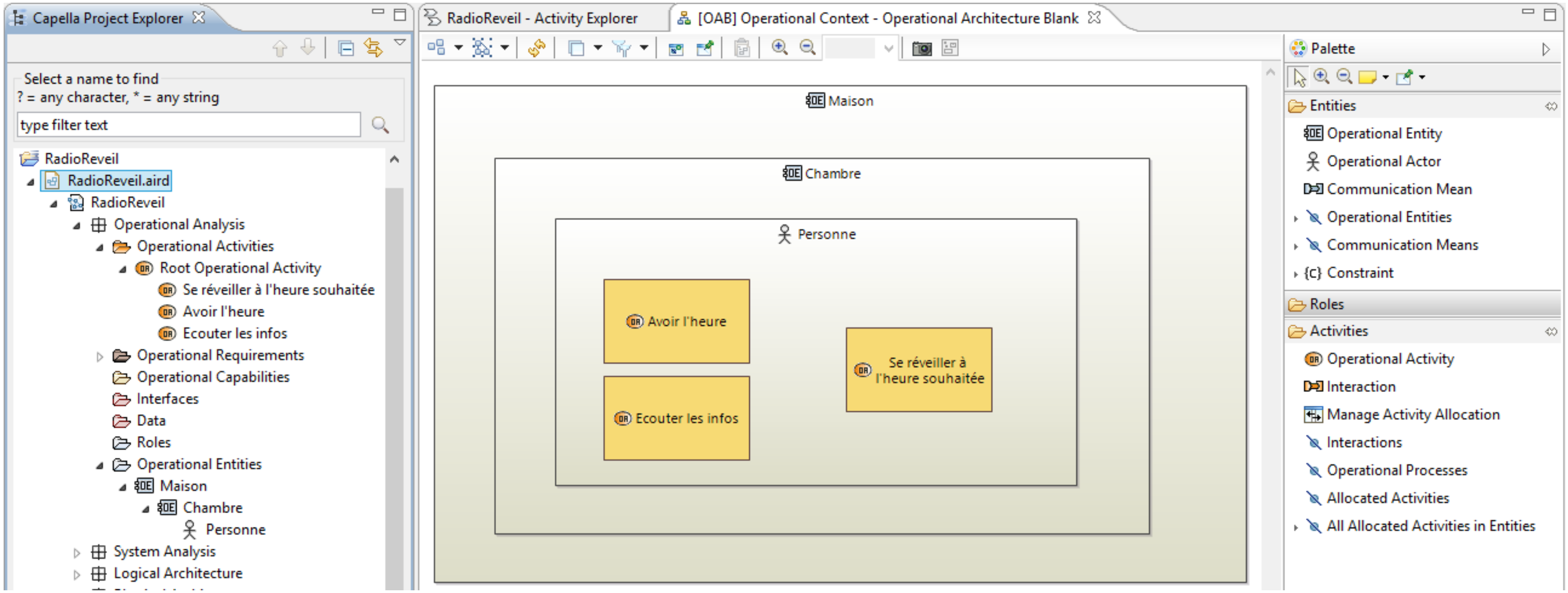
Operational Analysis
Define Stakeholders Needs
System Analysis

- Define Operational Entities and Capabilities
- Define Operational Activities and describe Interactions
- Allocate Operational Activities to Operational Actors, Entities or Roles
  - [OAB] Create a new Operational Architecture diagram
  - [ORB] Create a new Operational Role diagram
  - [OES] Create a new Operational Entity Scenario
- Transverse Modeling

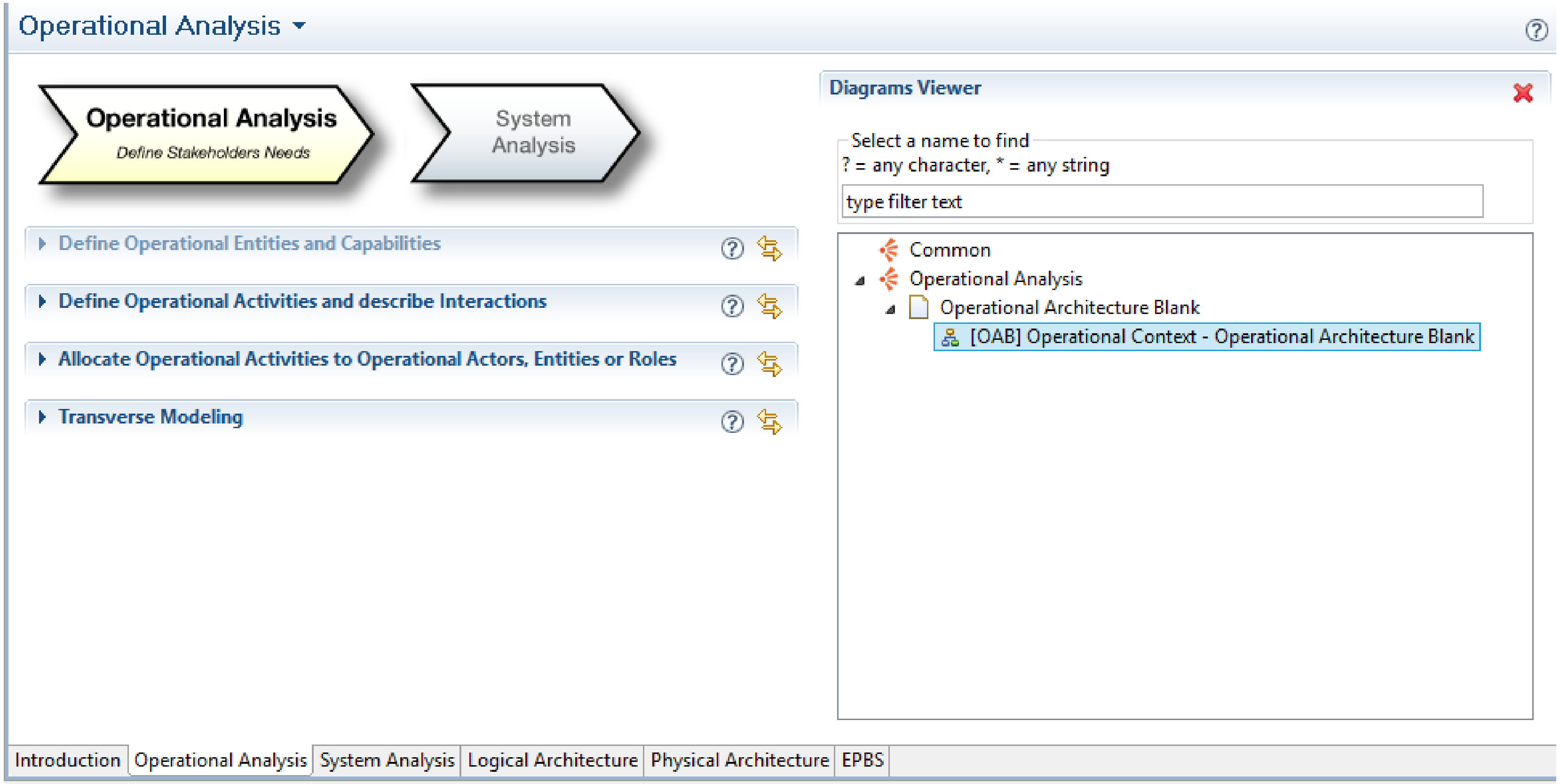
Operational Architecture Blank


Maison
Chambre
Personne
Avoir l'heure
Ecouter les infos
Se réveiller à l'heure souhaitée

OAB


Capella Project Explorer
Select a name to find
? = any character, * = any string
type filter text
RadioReveil
RadioReveil.aird
RadioReveil
Operational Analysis
Operational Activities
Root Operational Activity
Se réveiller à l'heure souhaitée
Avoir l'heure
Ecouter les infos
Operational Requirements
Operational Capabilities
Interfaces
Data
Roles
Operational Entities
Maison
Chambre
Personne
System Analysis
Logical Architecture
RadioReveil - Activity Explorer
[OAB] Operational Context - Operational Architecture Blank
Maison
Chambre
Personne
Avoir l'heure
Ecouter les infos
Se réveiller à l'heure souhaitée
Palette
Entities
Operational Entity
Operational Actor
Communication Mean
Operational Entities
Communication Means
Constraint
Roles
Activities
Operational Activity
Interaction
Manage Activity Allocation
Interactions
Operational Processes
Allocated Activities
All Allocated Activities in Entities

OA : Diagrams Viewer



Operational Analysis ▾

Operational Analysis
Define Stakeholders Needs
System Analysis

- Define Operational Entities and Capabilities
- Define Operational Activities and describe Interactions
- Allocate Operational Activities to Operational Actors, Entities or Roles
- Transverse Modeling

Diagrams Viewer

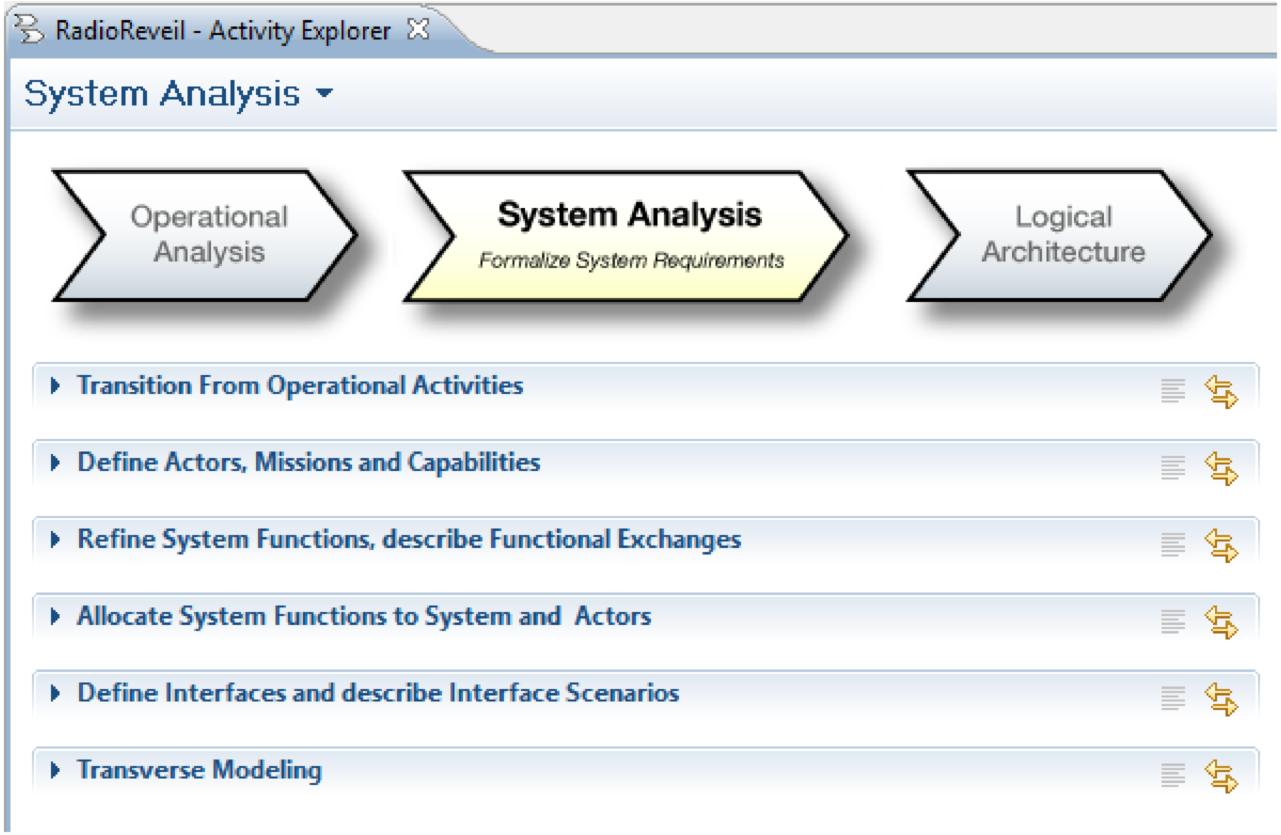
Select a name to find
? = any character, * = any string

type filter text

- Common
- Operational Analysis
  - Operational Architecture Blank
    - [OAB] Operational Context - Operational Architecture Blank

Introduction
Operational Analysis
System Analysis
Logical Architecture
Physical Architecture
EPBS

Analyse Système (SA)



RadioReveil - Activity Explorer

System Analysis

Operational Analysis

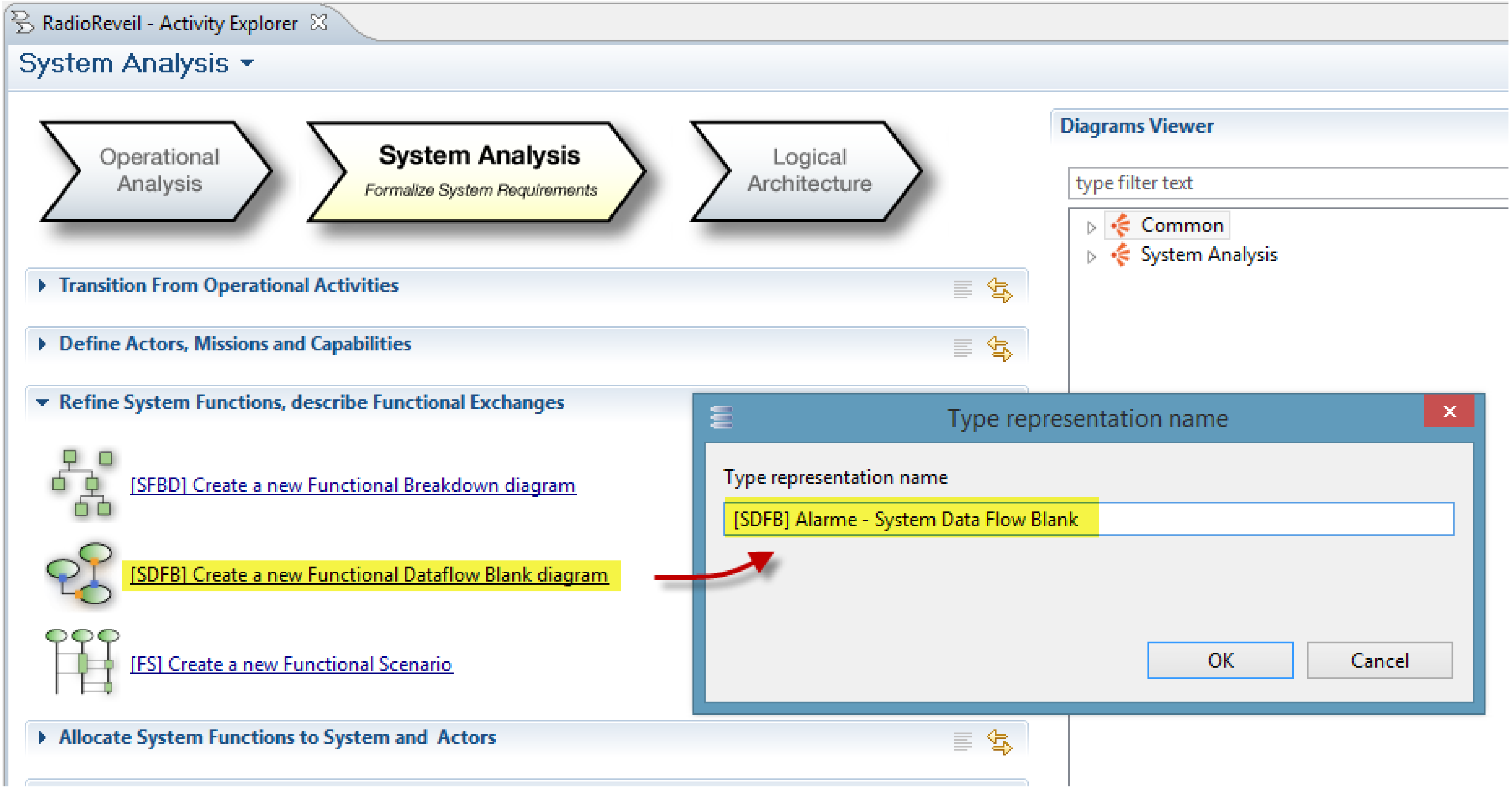
System Analysis

Formalize System Requirements

Logical Architecture

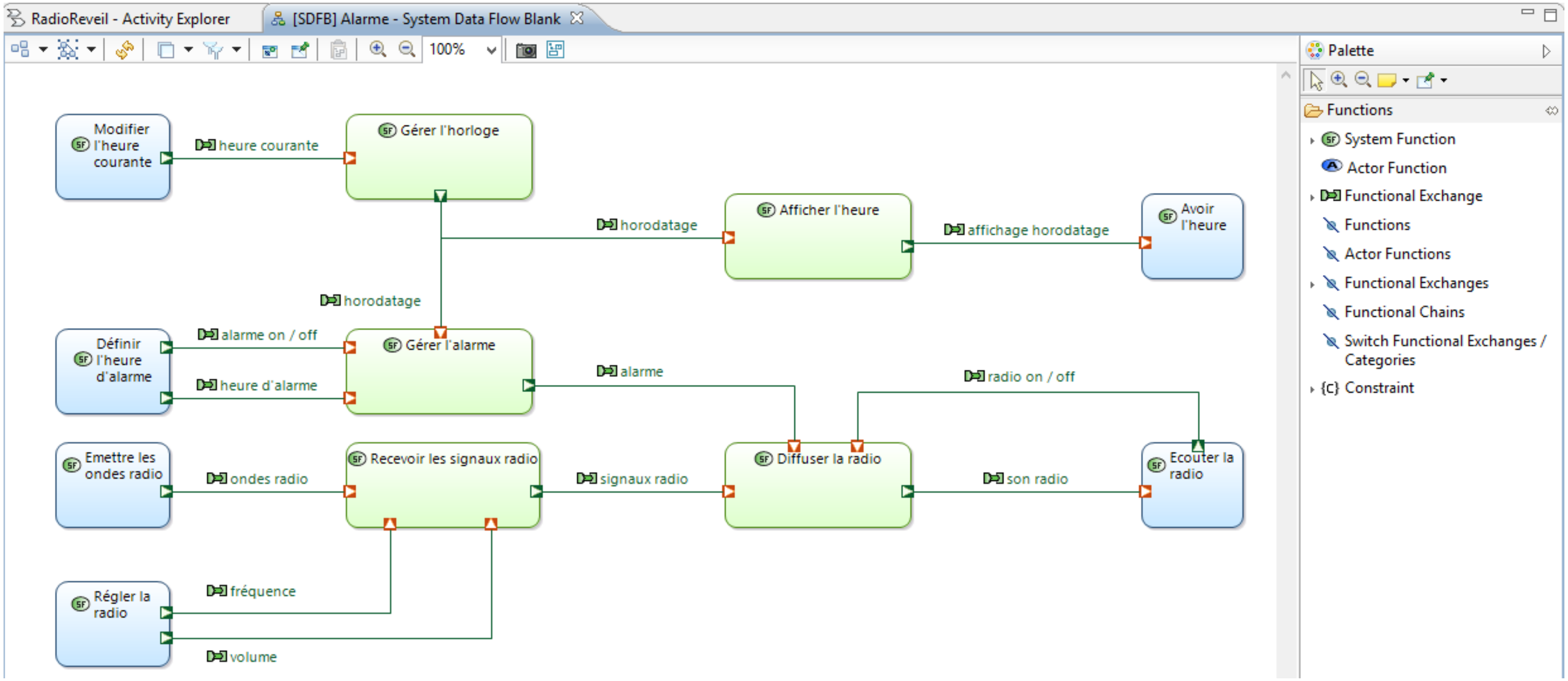
- Transition From Operational Activities
- Define Actors, Missions and Capabilities
- Refine System Functions, describe Functional Exchanges
- Allocate System Functions to System and Actors
- Define Interfaces and describe Interface Scenarios
- Transverse Modeling

System Data Flow Blank

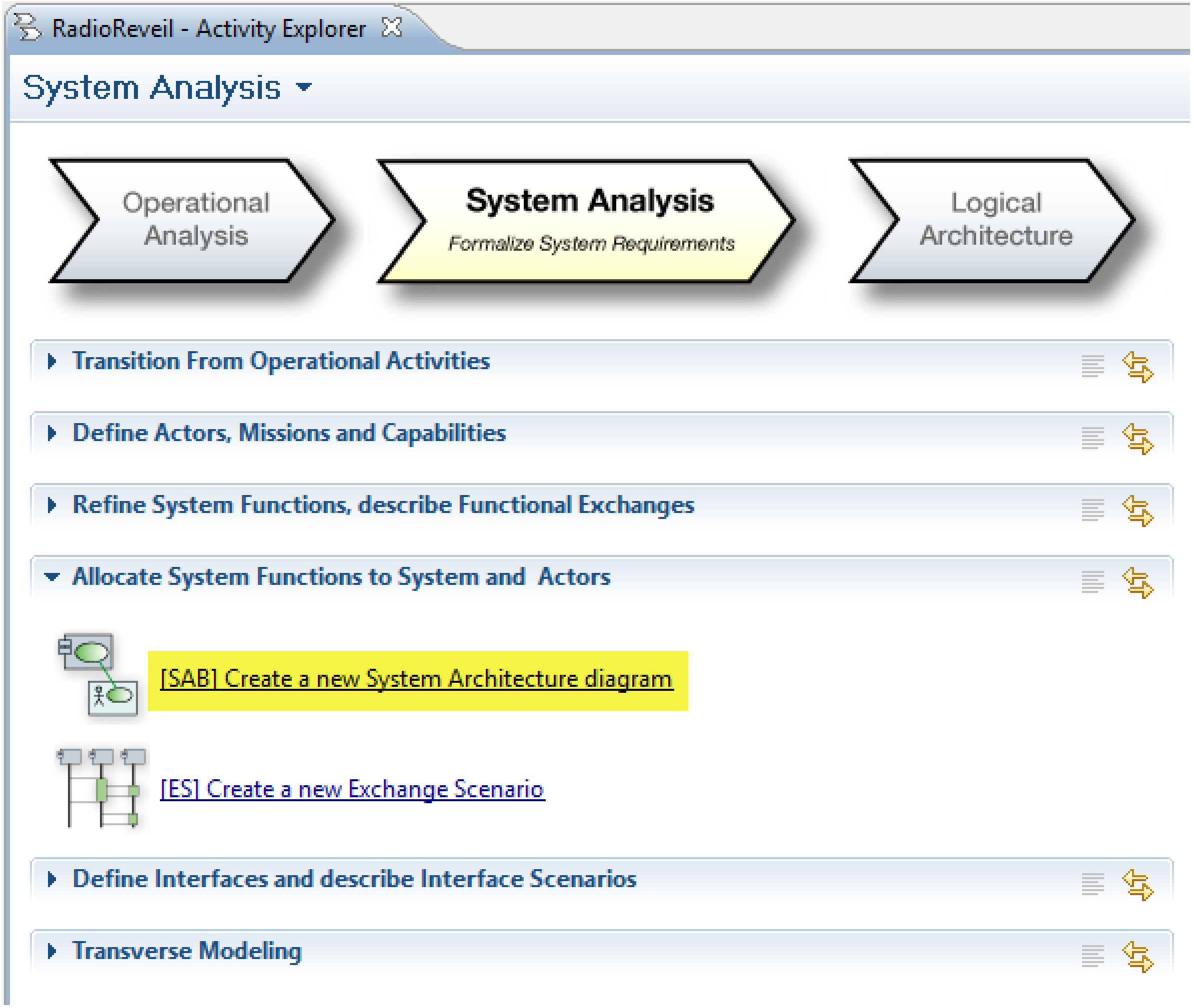

RadioReveil - Activity Explorer
System Analysis
Operational Analysis
System Analysis
Formalize System Requirements
Logical Architecture
Transition From Operational Activities
Define Actors, Missions and Capabilities
Refine System Functions, describe Functional Exchanges
[SFBD] Create a new Functional Breakdown diagram
[SDFB] Create a new Functional Dataflow Blank diagram
[FS] Create a new Functional Scenario
Allocate System Functions to System and Actors
Diagrams Viewer
type filter text
Common
System Analysis
Type representation name
OK
Cancel

Type representation name: [SDFB] Alarme - System Data Flow Blank

SDFB


RadioReveil - Activity Explorer
[SDFB] Alarme - System Data Flow Blank
100%
Modifier l'heure courante
heure courante
Gérer l'horloge
horodatage
Afficher l'heure
affichage horodatage
Avoir l'heure
horodatage
Définir l'heure d'alarme
alarme on / off
heure d'alarme
Gérer l'alarme
alarme
radio on / off
Emettre les ondes radio
ondes radio
Recevoir les signaux radio
signaux radio
Diffuser la radio
son radio
Ecouter la radio
Régler la radio
fréquence
volume
Palette
Functions
System Function
Actor Function
Functional Exchange
Functions
Actor Functions
Functional Exchanges
Functional Chains
Switch Functional Exchanges / Categories
{C} Constraint

System Architecture Blank



RadioReveil - Activity Explorer

System Analysis

Operational Analysis

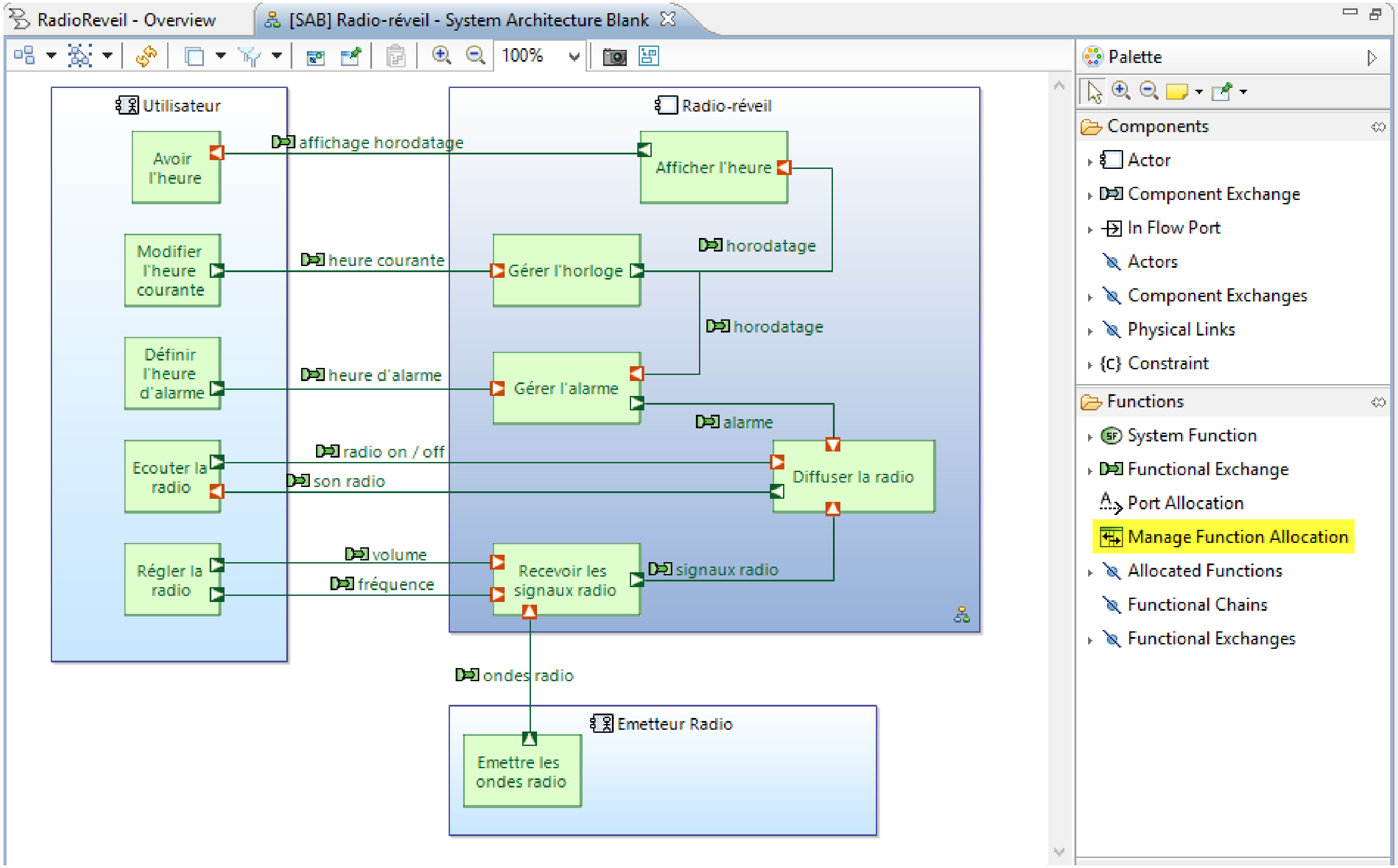
System Analysis

Formalize System Requirements

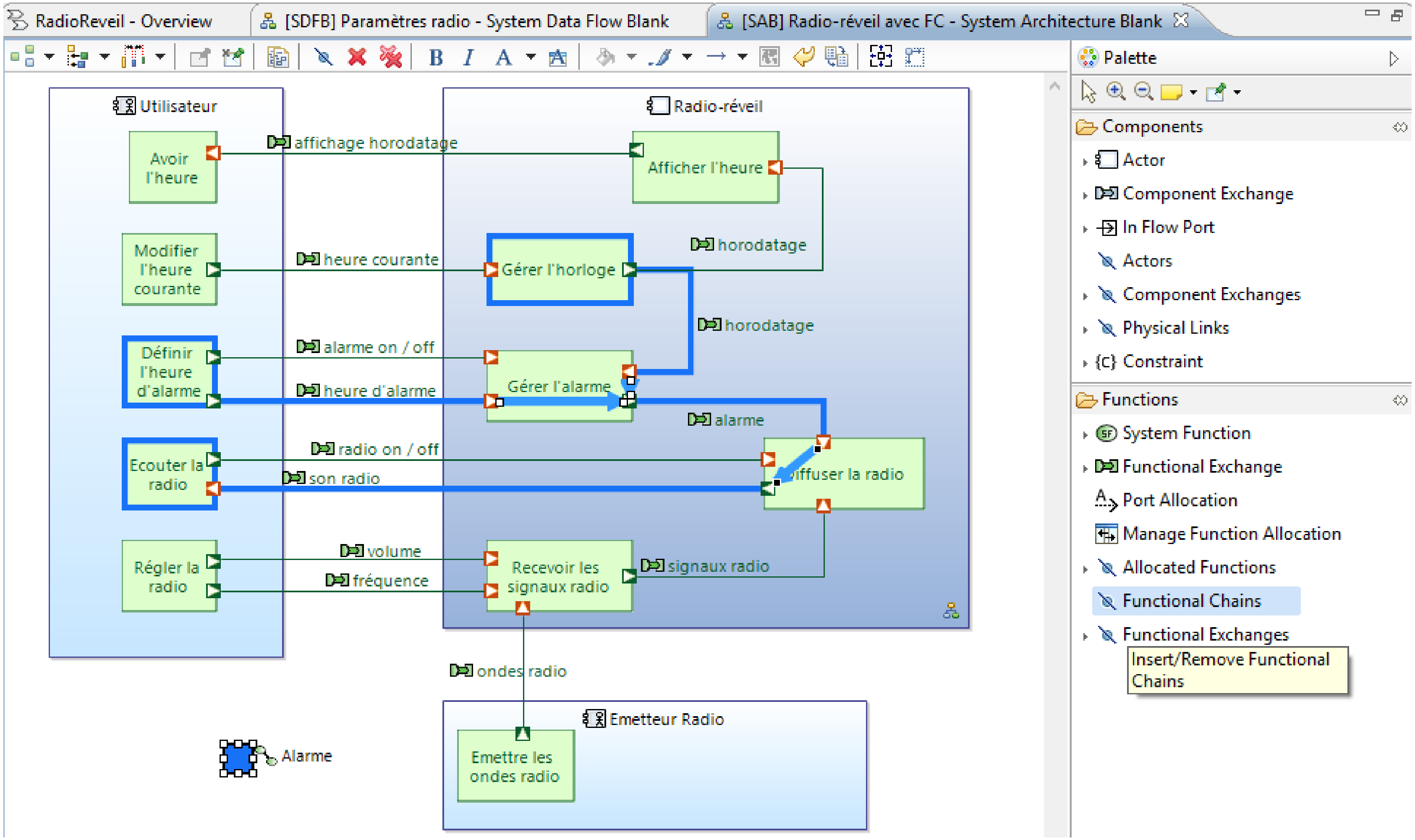
Logical Architecture

- Transition From Operational Activities
- Define Actors, Missions and Capabilities
- Refine System Functions, describe Functional Exchanges
- Allocate System Functions to System and Actors
  - [SAB] Create a new System Architecture diagram
  - [ES] Create a new Exchange Scenario
- Define Interfaces and describe Interface Scenarios
- Transverse Modeling

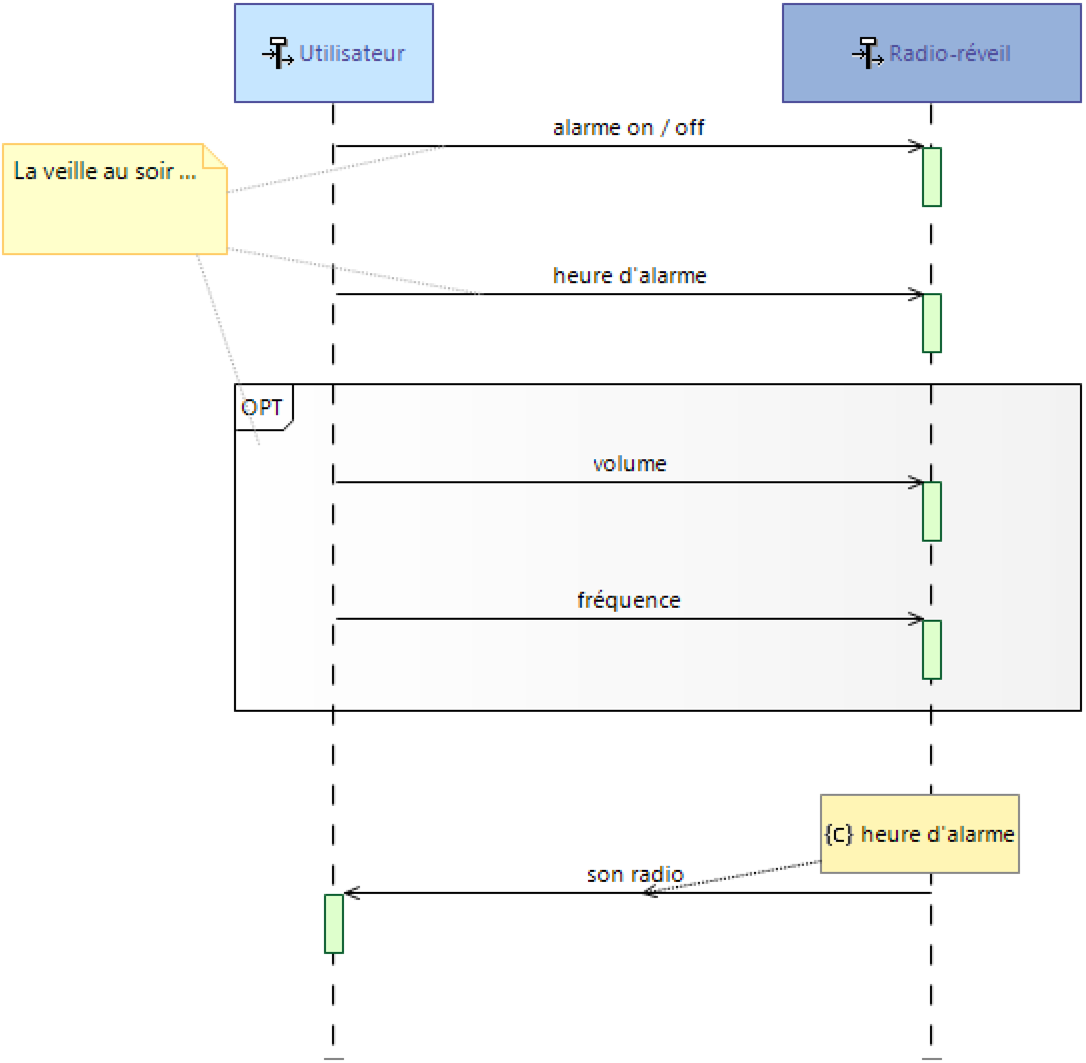
SAB : allocation des fonctions


RadioReveil - Overview
[SAB] Radio-réveil - System Architecture Blank
100%
Utilisateur
Avoir l'heure
Modifier l'heure courante
Définir l'heure d'alarme
Ecouter la radio
Régler la radio
Radio-réveil
affichage horodatage
Afficher l'heure
heure courante
Gérer l'horloge
horodatage
horodatage
heure d'alarme
Gérer l'alarme
alarme
radio on / off
son radio
Diffuser la radio
volume
fréquence
Recevoir les signaux radio
signaux radio
ondes radio
Emetteur Radio
Emettre les ondes radio
Palette
Components
Actor
Component Exchange
In Flow Port
Actors
Component Exchanges
Physical Links
{C} Constraint
Functions
System Function
Functional Exchange
Port Allocation
Manage Function Allocation
Allocated Functions
Functional Chains
Functional Exchanges

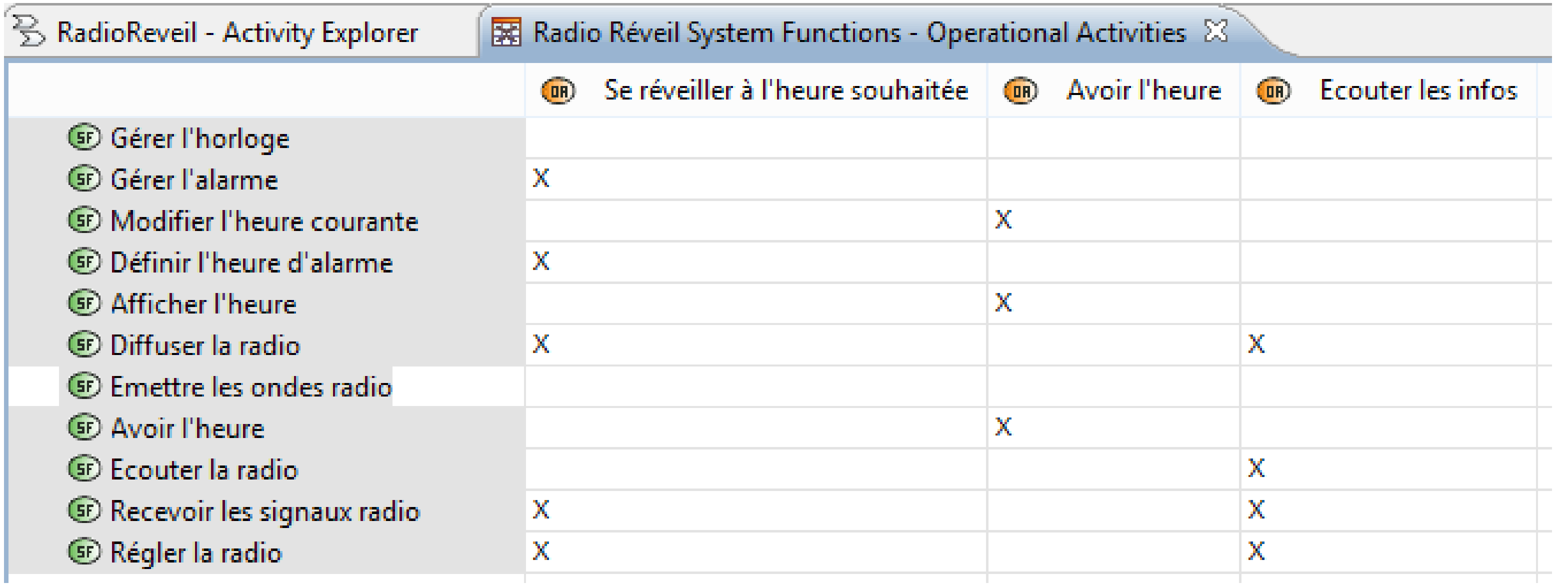
SAB + FC


RadioReveil - Overview
[SDFB] Paramètres radio - System Data Flow Blank
[SAB] Radio-réveil avec FC - System Architecture Blank
Utilisateur
Avoir l'heure
Modifier l'heure courante
Définir l'heure d'alarme
Ecouter la radio
Régler la radio
Radio-réveil
Afficher l'heure
Gérer l'horloge
Gérer l'alarme
Diffuser la radio
Recevoir les signaux radio
affichage horodatage
heure courante
alarme on / off
heure d'alarme
radio on / off
son radio
volume
fréquence
horodatage
horodatage
alarme
signaux radio
ondes radio
Emetteur Radio
Emettre les ondes radio
Alarme
Palette
Components
Actor
Component Exchange
In Flow Port
Actors
Component Exchanges
Physical Links
{C} Constraint
Functions
System Function
Functional Exchange
Port Allocation
Manage Function Allocation
Allocated Functions
Functional Chains
Functional Exchanges
Insert/Remove Functional Chains

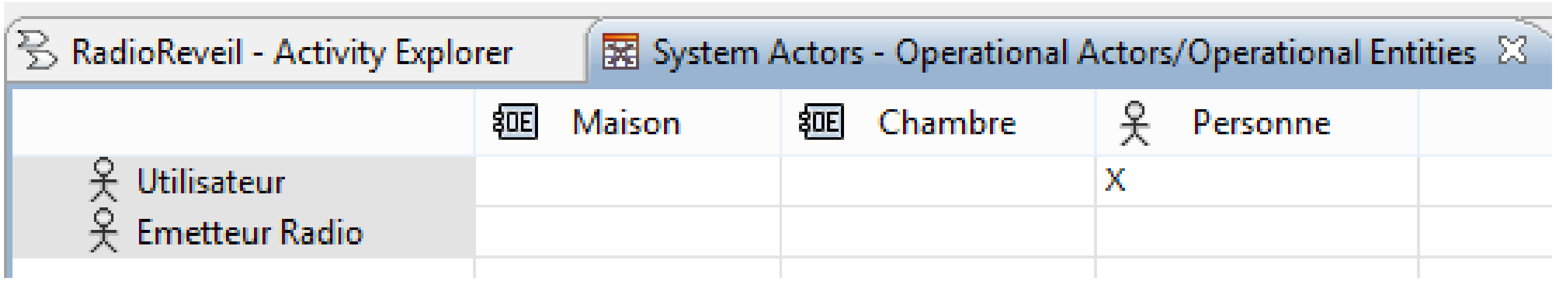
System Exchange Scenario


Utilisateur
Radio-réveil
La veille au soir ...
alarme on / off
heure d'alarme
OPT
volume
fréquence
{C} heure d'alarme
son radio

SA – OA Matrices


RadioReveil - Activity Explorer
Radio Réveil System Functions - Operational Activities

	Se réveiller à l'heure souhaitée	Avoir l'heure	Ecouter les infos
Gérer l'horloge			
Gérer l'alarme	X		
Modifier l'heure courante		X	
Définir l'heure d'alarme	X		
Afficher l'heure		X	
Diffuser la radio	X		X
Emettre les ondes radio			
Avoir l'heure		X	
Ecouter la radio			X
Recevoir les signaux radio	X		X
Régler la radio	X		X


RadioReveil - Activity Explorer
System Actors - Operational Actors/Operational Entities

	Maison	Chambre	Personne
Utilisateur			X
Emetteur Radio			

Class Diagram Blank

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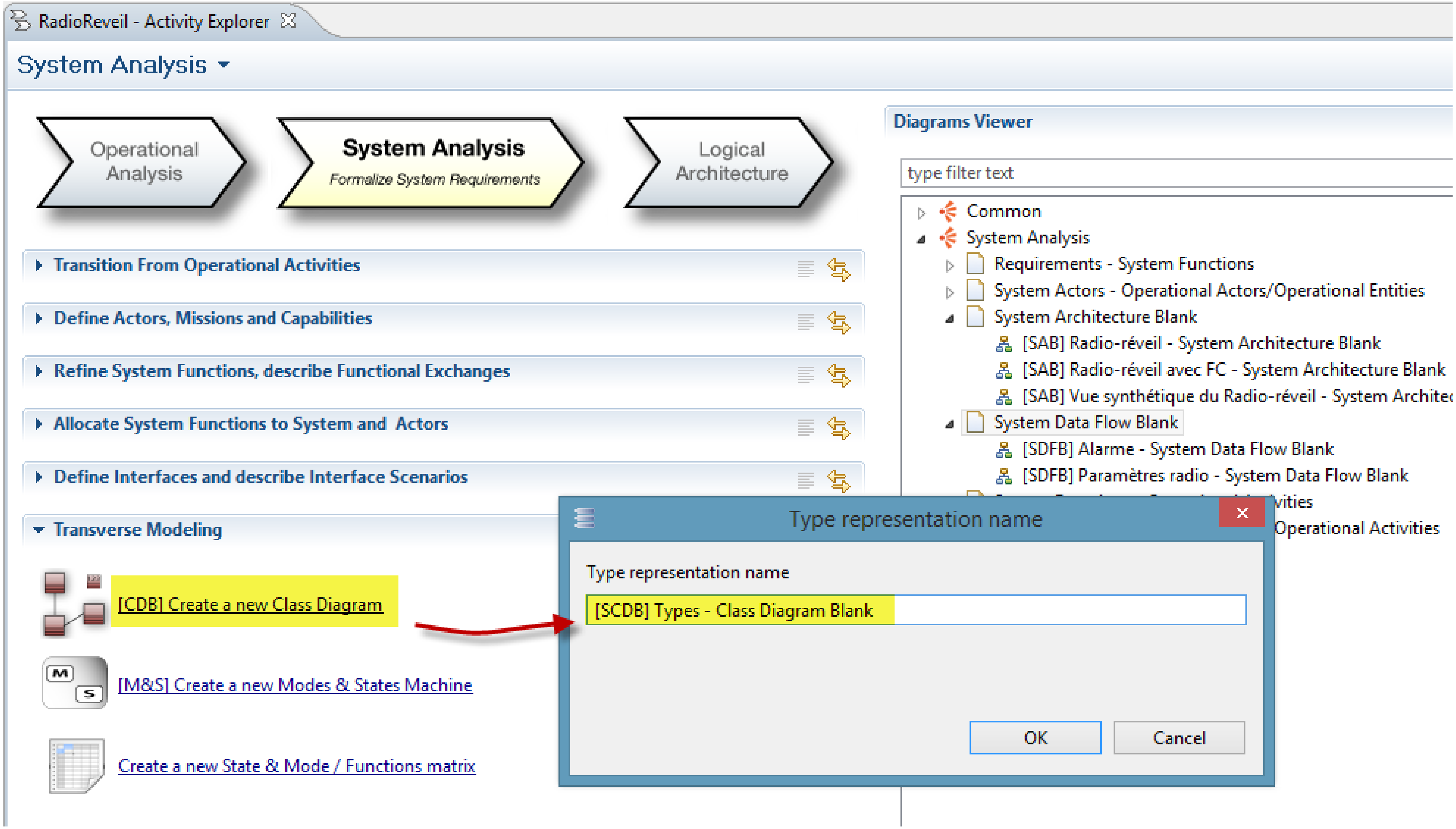
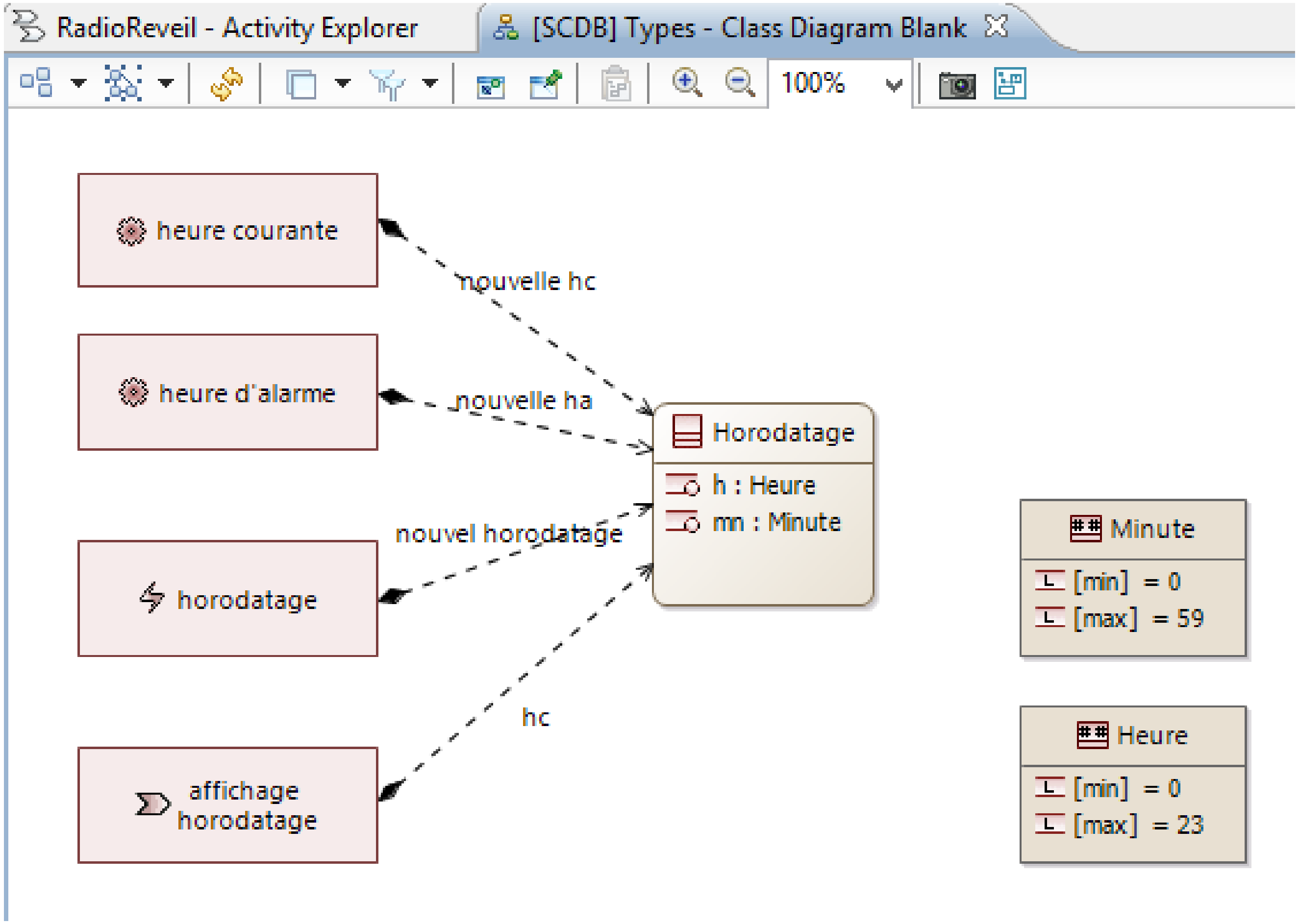
{PRFC}


RadioReveil - Activity Explorer
System Analysis
Operational Analysis
System Analysis
Formalize System Requirements
Logical Architecture
Transition From Operational Activities
Define Actors, Missions and Capabilities
Refine System Functions, describe Functional Exchanges
Allocate System Functions to System and Actors
Define Interfaces and describe Interface Scenarios
Transverse Modeling
[CDB] Create a new Class Diagram
[M&S] Create a new Modes & States Machine
Create a new State & Mode / Functions matrix
Diagrams Viewer
type filter text
Common
System Analysis
Requirements - System Functions
System Actors - Operational Actors/Operational Entities
System Architecture Blank
[SAB] Radio-réveil - System Architecture Blank
[SAB] Radio-réveil avec FC - System Architecture Blank
[SAB] Vue synthétique du Radio-réveil - System Architec
System Data Flow Blank
[SDFB] Alarme - System Data Flow Blank
[SDFB] Paramètres radio - System Data Flow Blank
vities
Operational Activities
Type representation name
OK
Cancel

Type representation name: [SCDB] Types - Class Diagram Blank

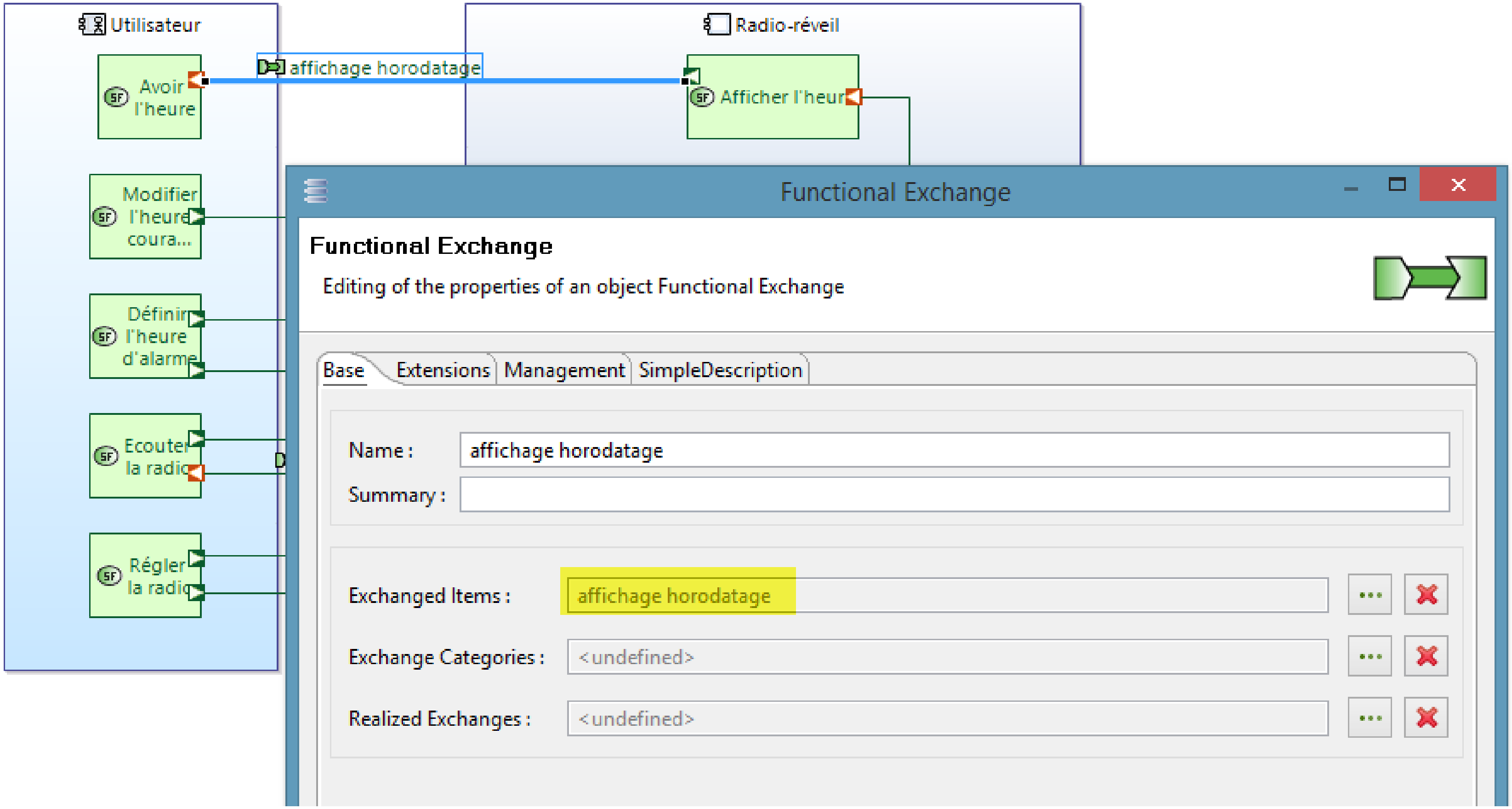
Clarity

SCDB : Exchange Items et Types



RadioReveil - Activity Explorer
[SCDB] Types - Class Diagram Blank
100%
heure courante
heure d'alarme
horodatage
affichage horodatage
nouvelle hc
nouvelle ha
nouvel horodatage
hc
Horodatage
h : Heure
mn : Minute
Minute
[min] = 0
[max] = 59
Heure
[min] = 0
[max] = 23

SAB : Exchange Item et FE


Utilisateur
Avoir l'heure
Modifier l'heure coura...
Définir l'heure d'alarme
Ecouter la radio
Régler la radio
affichage horodatage
Radio-réveil
Afficher l'heure
Base
Extensions
Management
SimpleDescription
...

Functional Exchange

Functional Exchange

Editing of the properties of an object Functional Exchange

Name : affichage horodatage

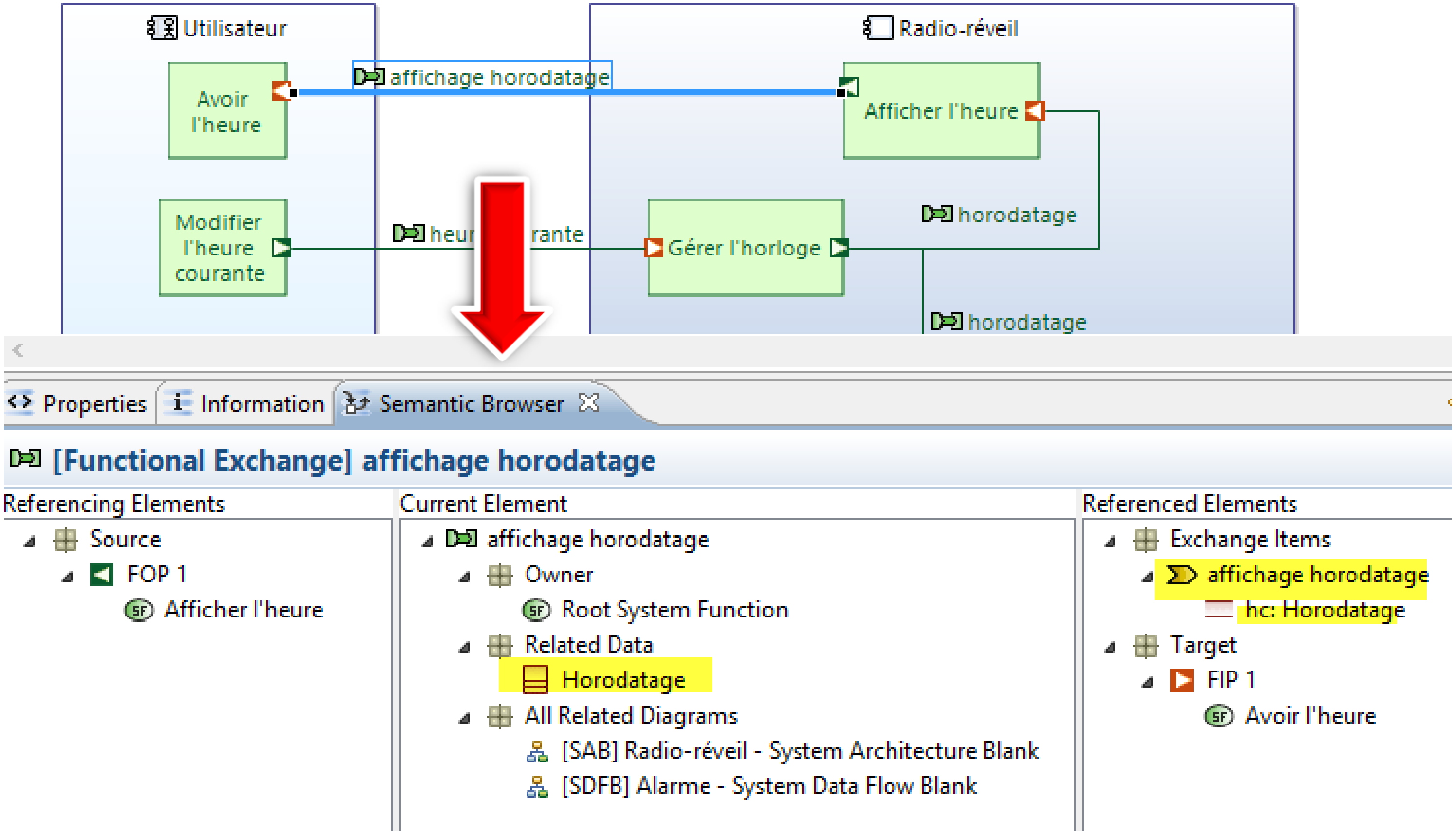
Summary :

Exchanged Items : affichage horodatage

Exchange Categories : <undefined>

Realized Exchanges : <undefined>

Semantic Browser


Utilisateur
Radio-réveil
Avoir l'heure
affichage horodatage
Afficher l'heure
horodatage
Modifier l'heure courante
heur
rante
Gérer l'horloge
horodatage
Properties
Information
Semantic Browser

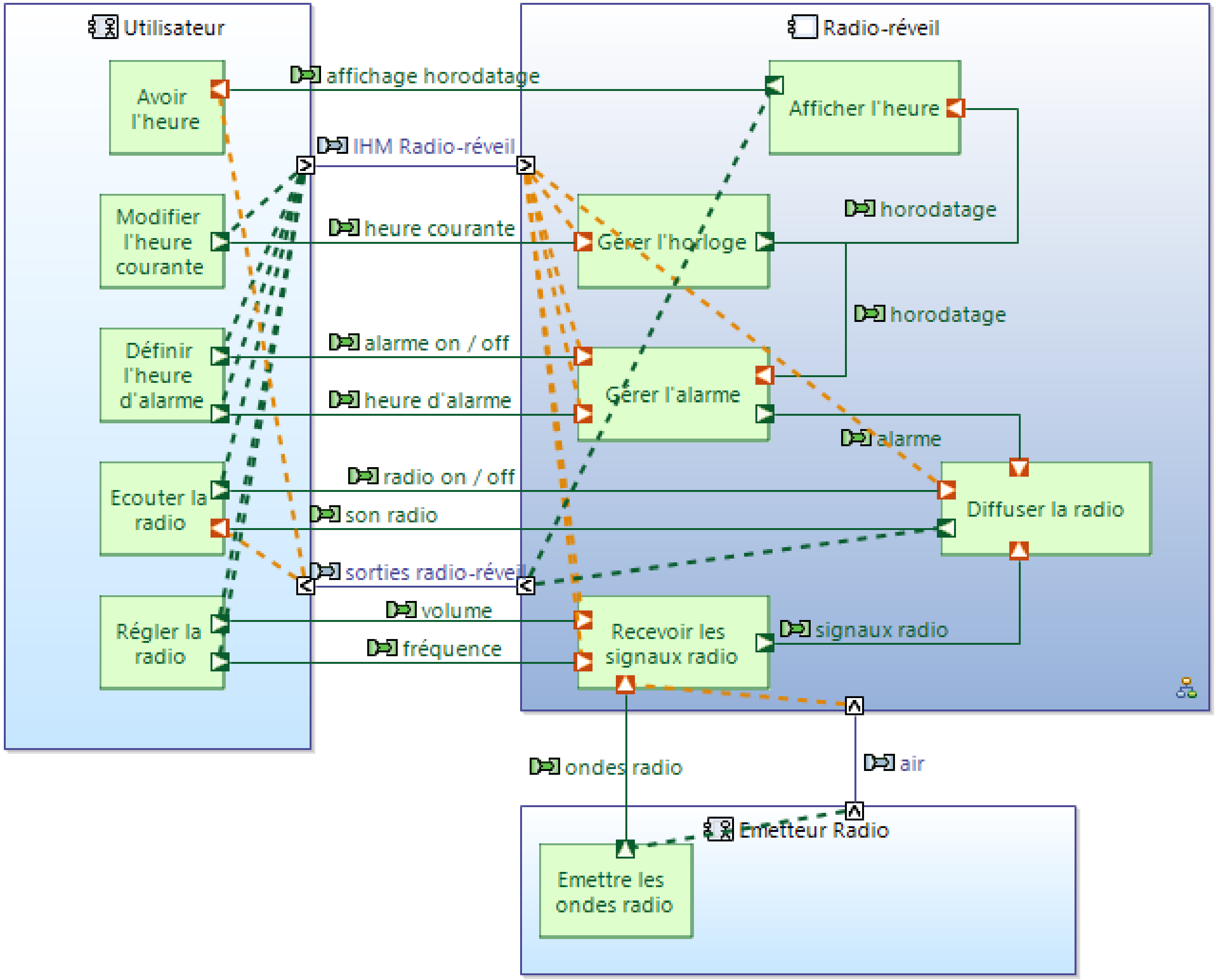
[Functional Exchange] affichage horodatage

Referencing Elements
- Source
  - FOP 1
    - Afficher l'heure

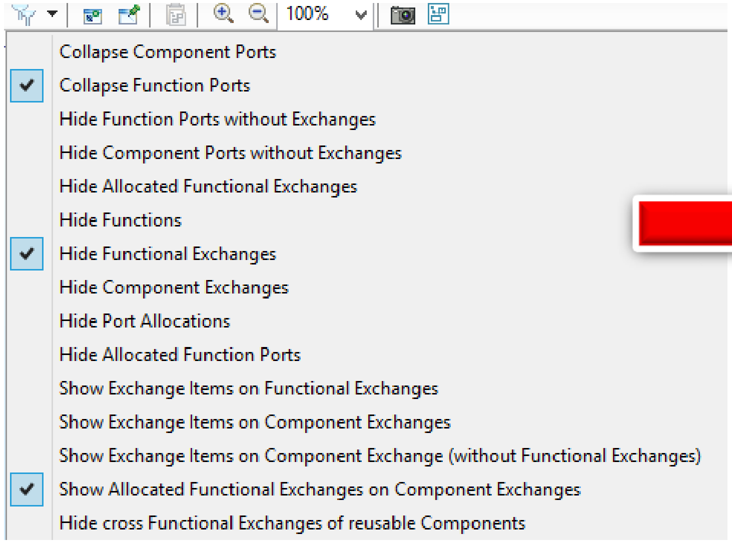
Current Element
- affichage horodatage
  - Owner
    - Root System Function
  - Related Data
    - Horodatage
  - All Related Diagrams
    - [SAB] Radio-réveil - System Architecture Blank
    - [SDFB] Alarme - System Data Flow Blank

Referenced Elements
- Exchange Items
  - affichage horodatage
    - hc: Horodatage
- Target
  - FIP 1
    - Avoir l'heure

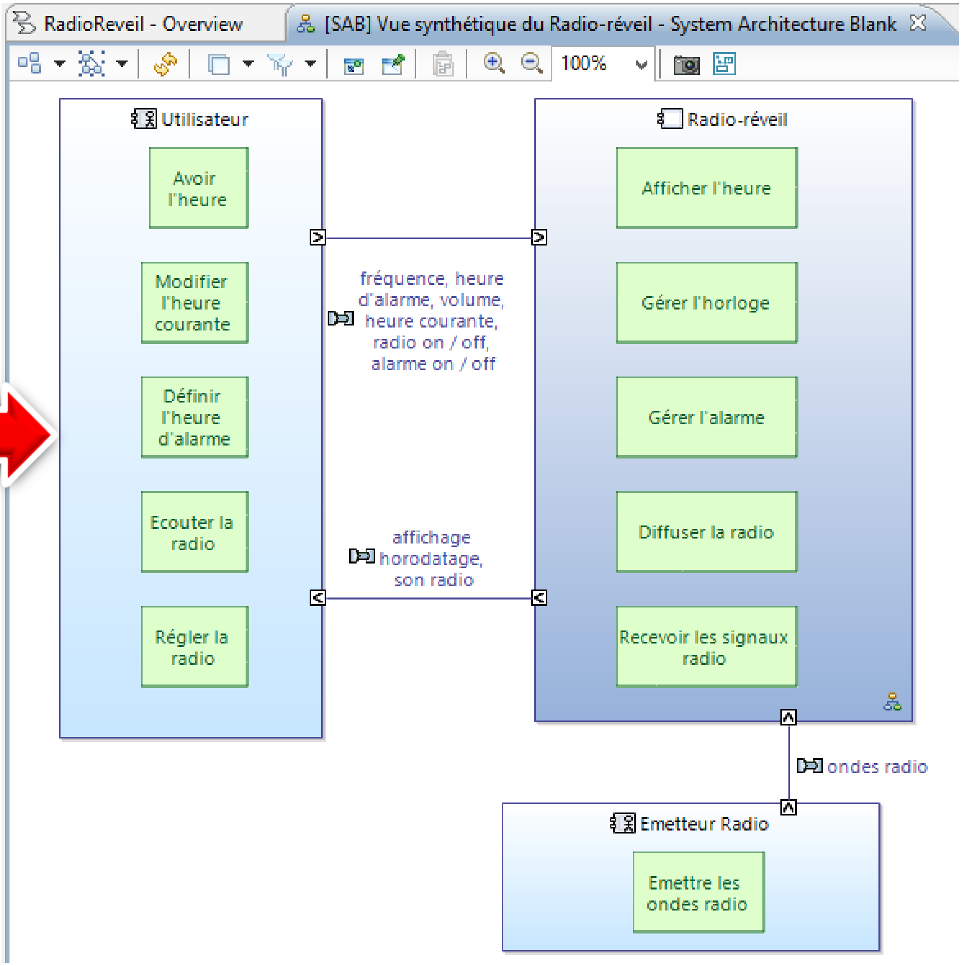
SAB complété avec les CEs et allocations


Utilisateur
Avoir l'heure
Modifier l'heure courante
Définir l'heure d'alarme
Ecouter la radio
Régler la radio
Radio-réveil
Afficher l'heure
Gérer l'horloge
Gérer l'alarme
Diffuser la radio
Recevoir les signaux radio
affichage horodatage
IHM Radio-réveil
heure courante
alarme on / off
heure d'alarme
radio on / off
son radio
sorties radio-réveil
volume
fréquence
horodatage
horodatage
alarme
signaux radio
ondes radio
air
Emetteur Radio
Emettre les ondes radio

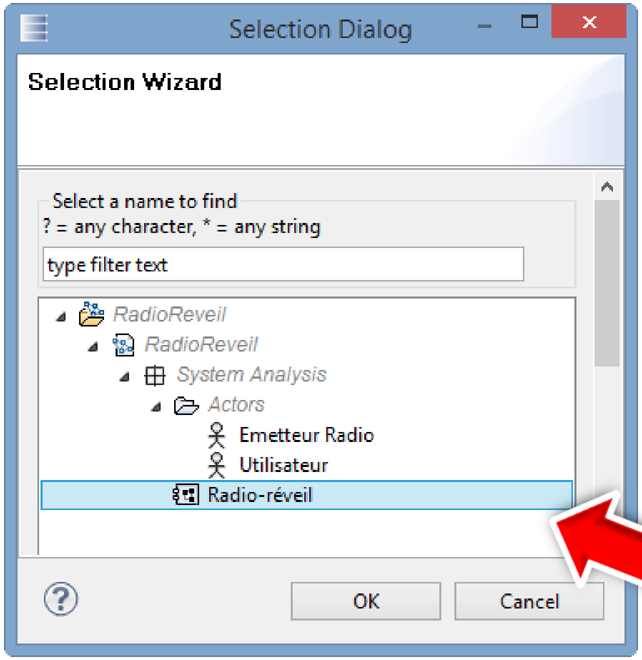
SAB : combinaison de filtres



- ☐ Collapse Component Ports
- ☑ Collapse Function Ports
- ☐ Hide Function Ports without Exchanges
- ☐ Hide Component Ports without Exchanges
- ☐ Hide Allocated Functional Exchanges
- ☐ Hide Functions
- ☑ Hide Functional Exchanges
- ☐ Hide Component Exchanges
- ☐ Hide Port Allocations
- ☐ Hide Allocated Function Ports
- ☐ Show Exchange Items on Functional Exchanges
- ☐ Show Exchange Items on Component Exchanges
- ☐ Show Exchange Items on Component Exchange (without Functional Exchanges)
- ☑ Show Allocated Functional Exchanges on Component Exchanges
- ☐ Hide cross Functional Exchanges of reusable Components


RadioReveil - Overview
[SAB] Vue synthétique du Radio-réveil - System Architecture Blank
100%
Utilisateur
Avoir l'heure
Modifier l'heure courante
Définir l'heure d'alarme
Ecouter la radio
Régler la radio
Radio-réveil
Afficher l'heure
Gérer l'horloge
Gérer l'alarme
Diffuser la radio
Recevoir les signaux radio
fréquence, heure d'alarme, volume, heure courante, radio on / off, alarme on / off
affichage horodatage, son radio
ondes radio
Emetteur Radio
Emettre les ondes radio

SA : Modes & States Machine



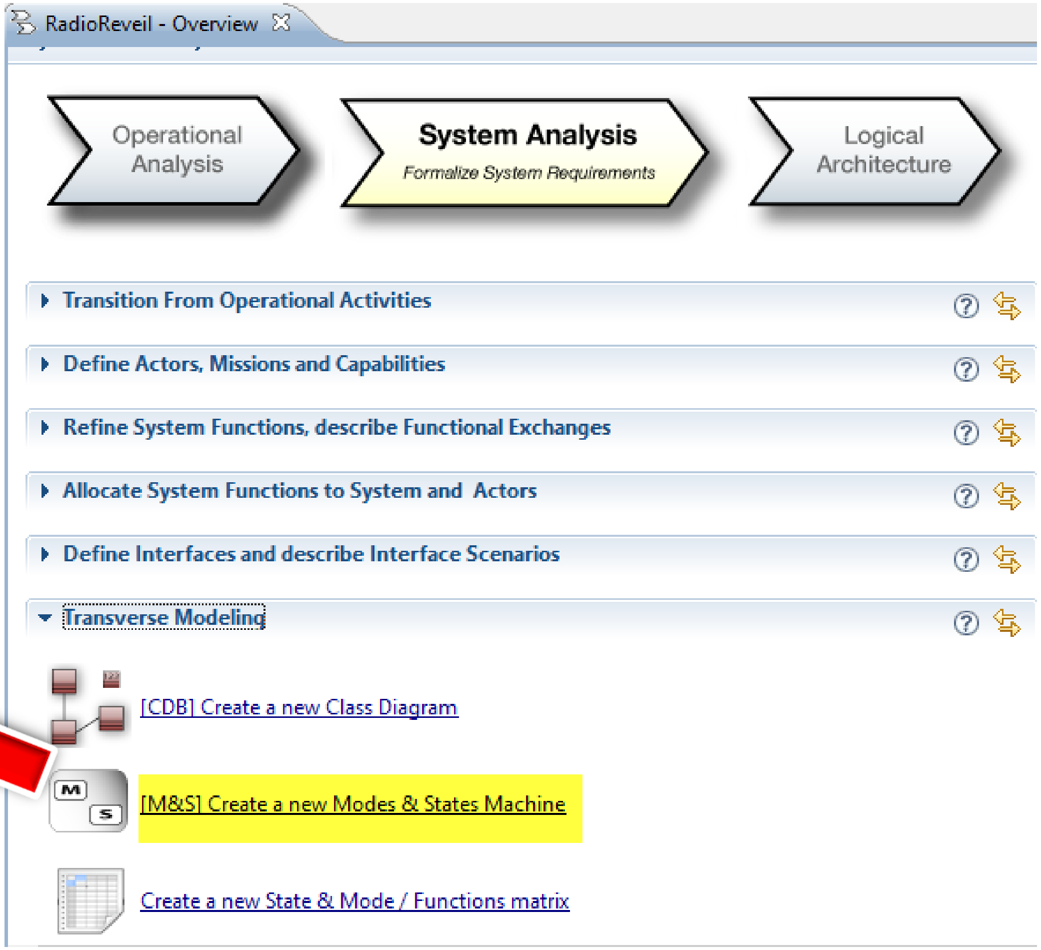
Selection Dialog

Selection Wizard

Select a name to find
? = any character, * = any string

type filter text

- RadioReveil
  - RadioReveil
    - System Analysis
      - Actors
        - Emetteur Radio
        - Utilisateur
      - Radio-réveil

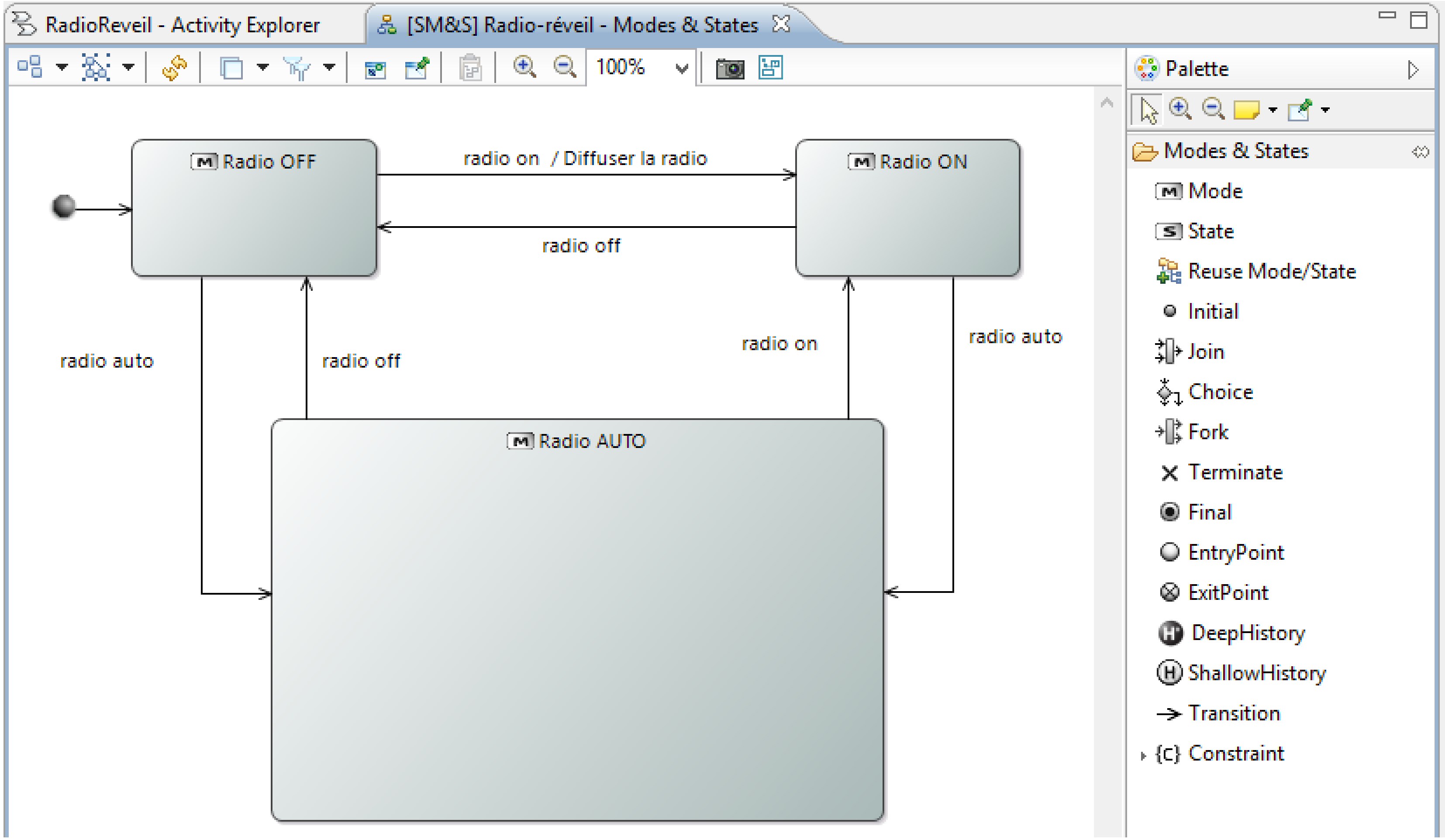


RadioReveil - Overview

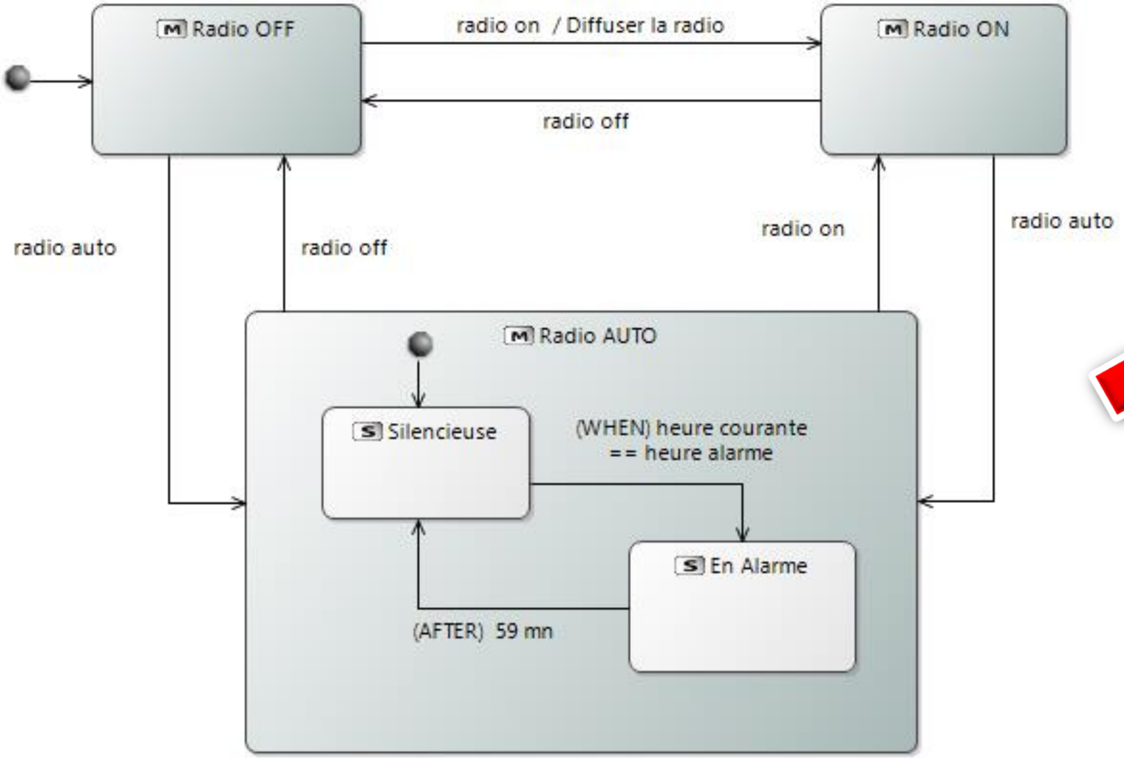
Operational Analysis
System Analysis
Formalize System Requirements
Logical Architecture

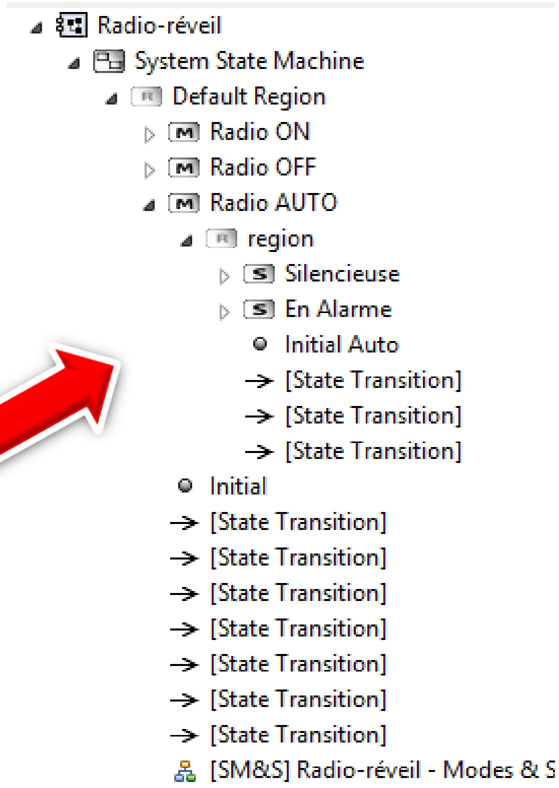
- Transition From Operational Activities
- Define Actors, Missions and Capabilities
- Refine System Functions, describe Functional Exchanges
- Allocate System Functions to System and Actors
- Define Interfaces and describe Interface Scenarios
- Transverse Modeling
  - [CDB] Create a new Class Diagram
  - [M&S] Create a new Modes & States Machine
  - Create a new State & Mode / Functions matrix

SA : Modes & States Diagram (début)

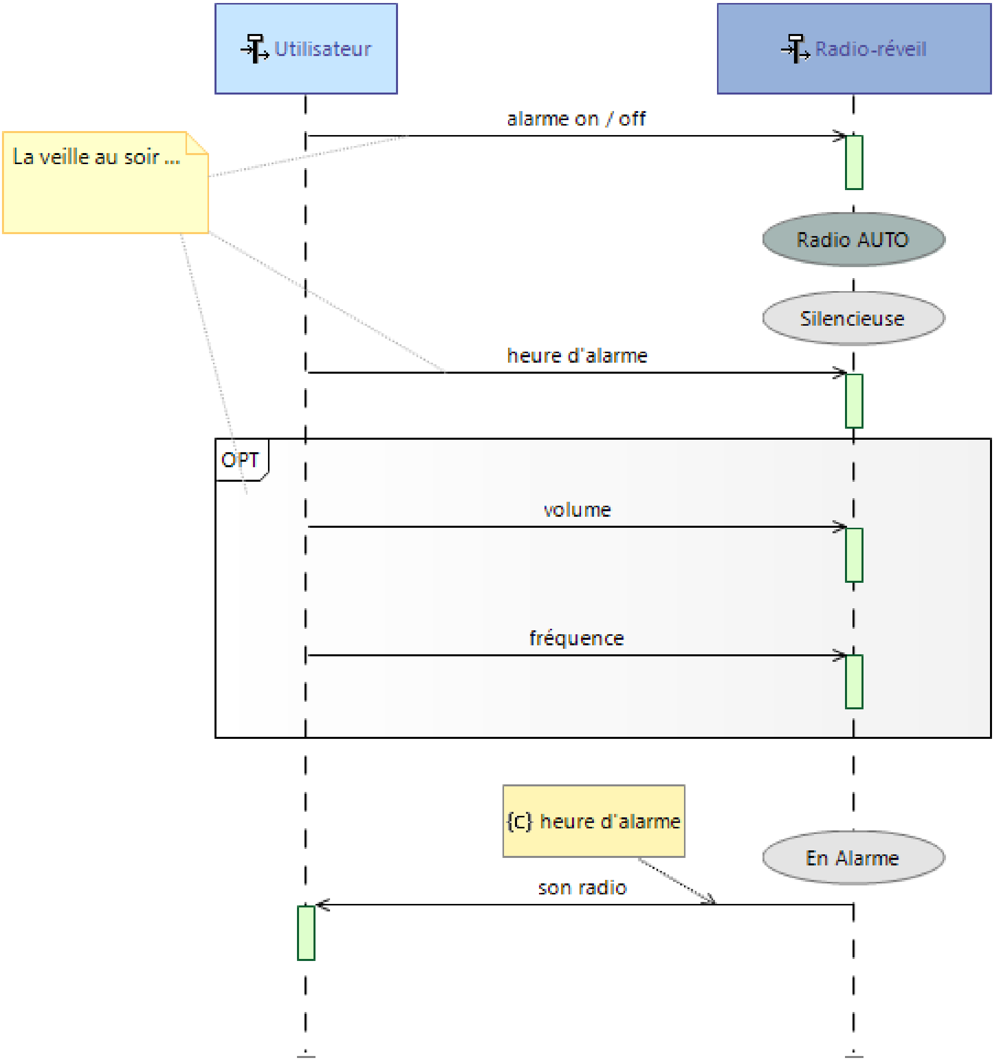

RadioReveil - Activity Explorer
[SM&S] Radio-réveil - Modes & States
100%
Radio OFF
Radio ON
Radio AUTO
radio on / Diffuser la radio
radio off
radio auto
radio off
radio on
radio auto
Palette
Modes & States
Mode
State
Reuse Mode/State
Initial
Join
Choice
Fork
Terminate
Final
EntryPoint
ExitPoint
DeepHistory
ShallowHistory
Transition
{C} Constraint

SA : S&M Diagram (fin)

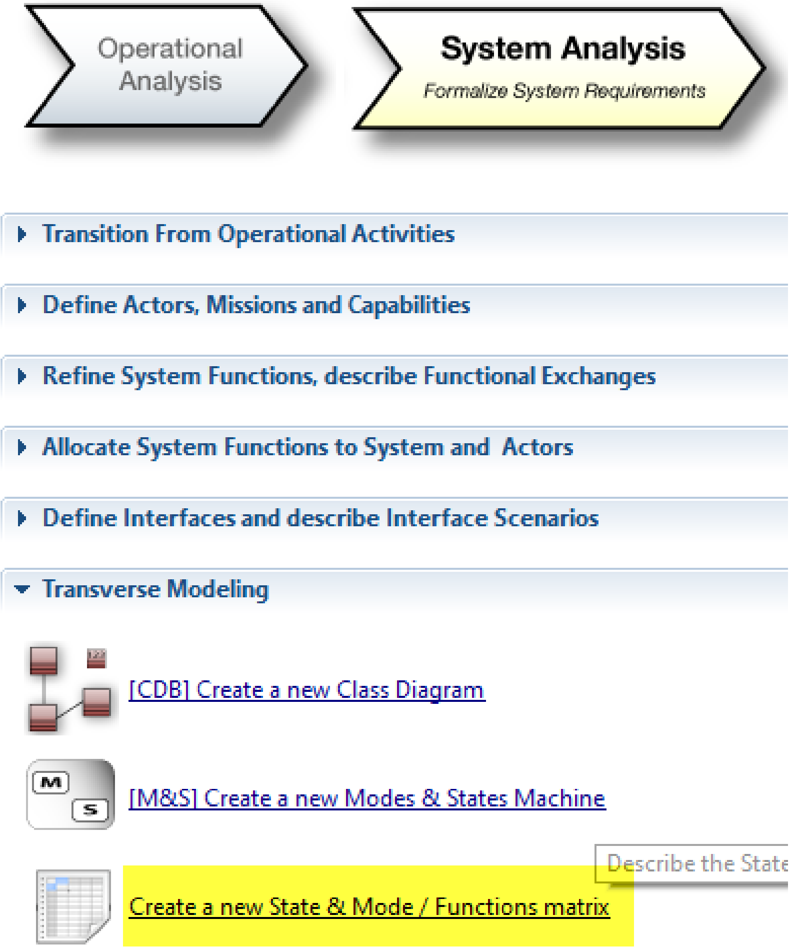

Radio OFF
radio on / Diffuser la radio
Radio ON
radio off
radio auto
radio off
radio on
radio auto
Radio AUTO
Silencieuse
(WHEN) heure courante
== heure alarme
En Alarme
(AFTER) 59 mn


- Radio-réveil
  - System State Machine
    - Default Region
      - Radio ON
      - Radio OFF
      - Radio AUTO
        - region
          - Silencieuse
          - En Alarme
          - Initial Auto
          - [State Transition]
          - [State Transition]
          - [State Transition]
      - Initial
      - [State Transition]
      - [State Transition]
      - [State Transition]
      - [State Transition]
      - [State Transition]
      - [State Transition]
      - [State Transition]
      - [SM&S] Radio-réveil - Modes & S

SA : Scénario complété


Utilisateur
Radio-réveil
La veille au soir ...
alarme on / off
Radio AUTO
Silencieuse
heure d'alarme
OPT
volume
fréquence
{C} heure d'alarme
En Alarme
son radio

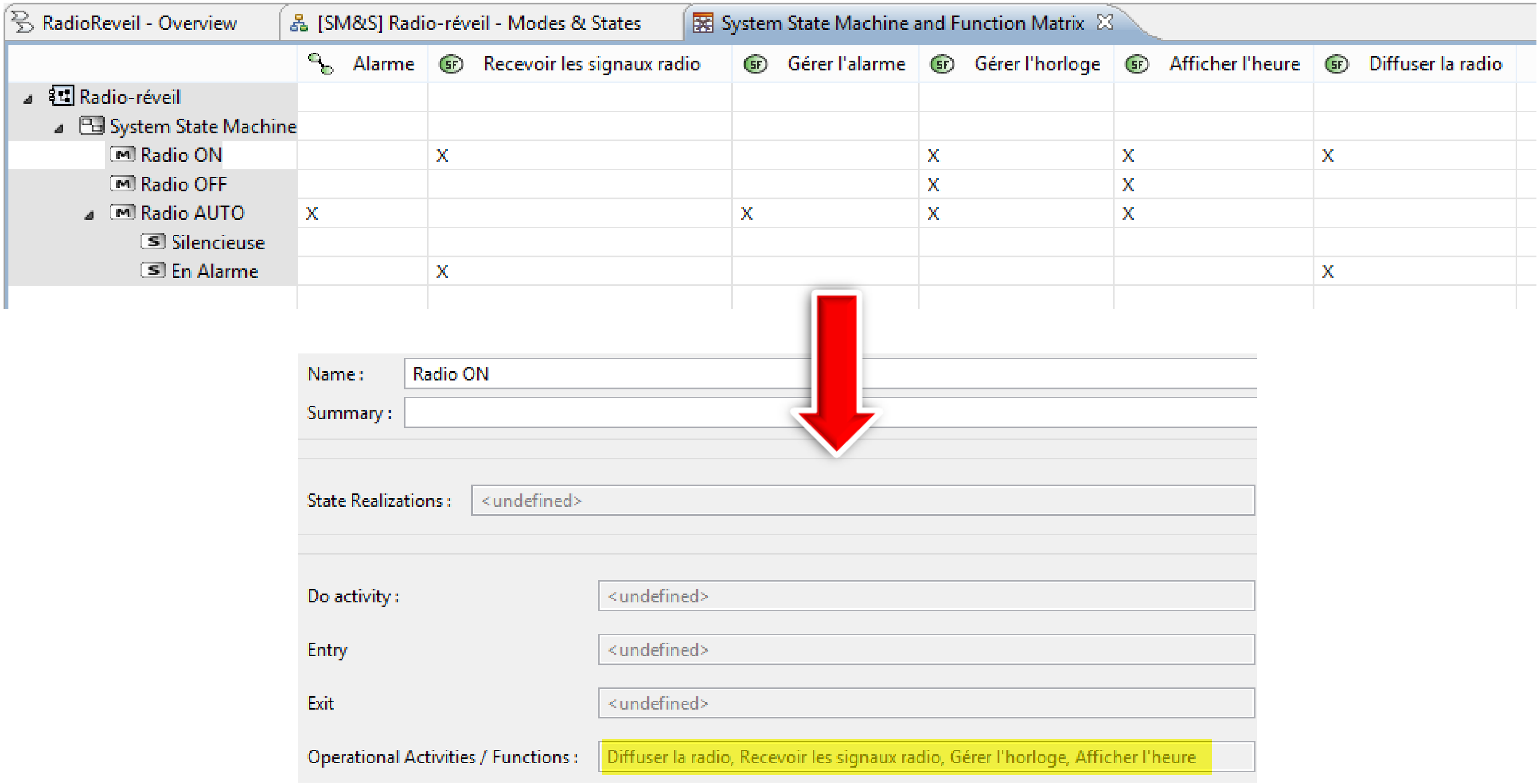
SA : Matrice S&M / Fonctions


Operational Analysis
System Analysis
Formalize System Requirements

- Transition From Operational Activities
- Define Actors, Missions and Capabilities
- Refine System Functions, describe Functional Exchanges
- Allocate System Functions to System and Actors
- Define Interfaces and describe Interface Scenarios
- Transverse Modeling
  - [CDB] Create a new Class Diagram
  - [M&S] Create a new Modes & States Machine
  - Create a new State & Mode / Functions matrix

Describe the State

SA : S&M Matrix


RadioReveil - Overview
[SM&S] Radio-réveil - Modes & States
System State Machine and Function Matrix

	Alarme	Recevoir les signaux radio	Gérer l'alarme	Gérer l'horloge	Afficher l'heure	Diffuser la radio
Radio-réveil						
System State Machine						
Radio ON		X		X	X	X
Radio OFF				X	X	
Radio AUTO	X		X	X	X	
Silencieuse						
En Alarme		X				X

Name : Radio ON

Summary :

State Realizations : <undefined>

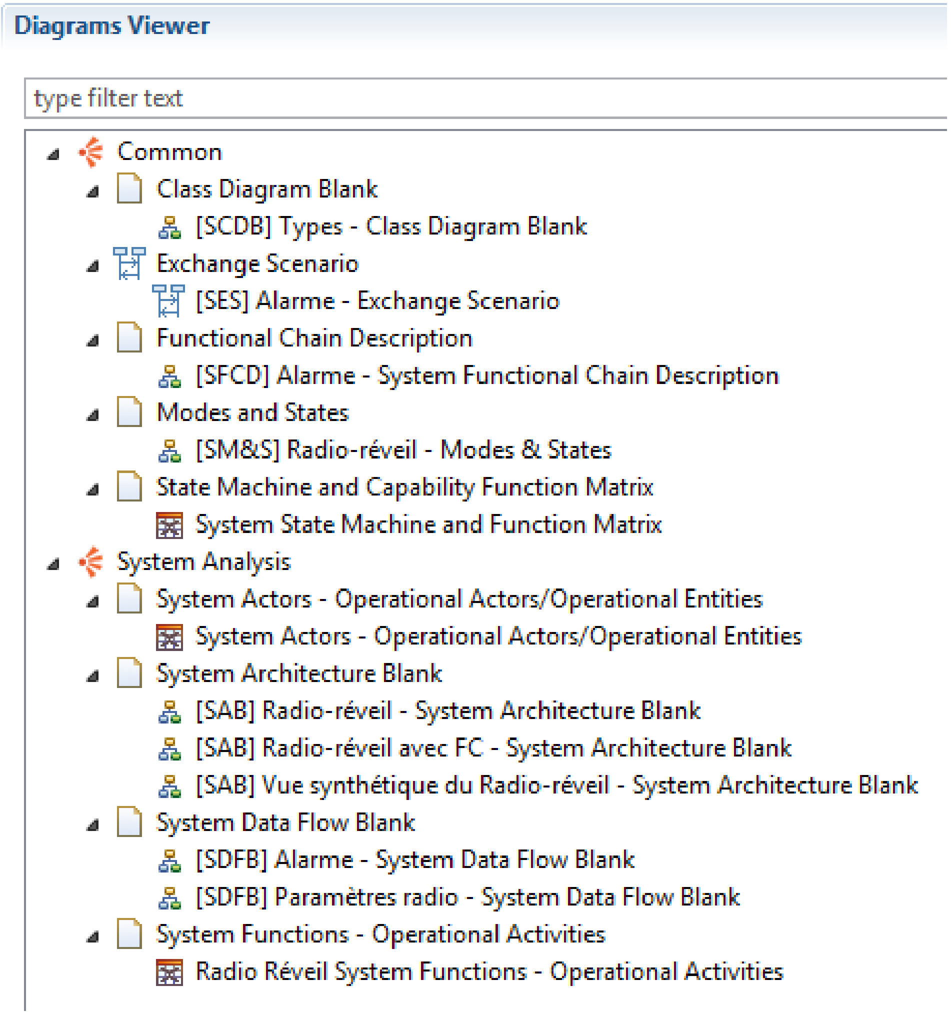
Do activity : <undefined>

Entry <undefined>

Exit <undefined>

Operational Activities / Functions : Diffuser la radio, Recevoir les signaux radio, Gérer l'horloge, Afficher l'heure

Analyse Système : Diagrams Viewer

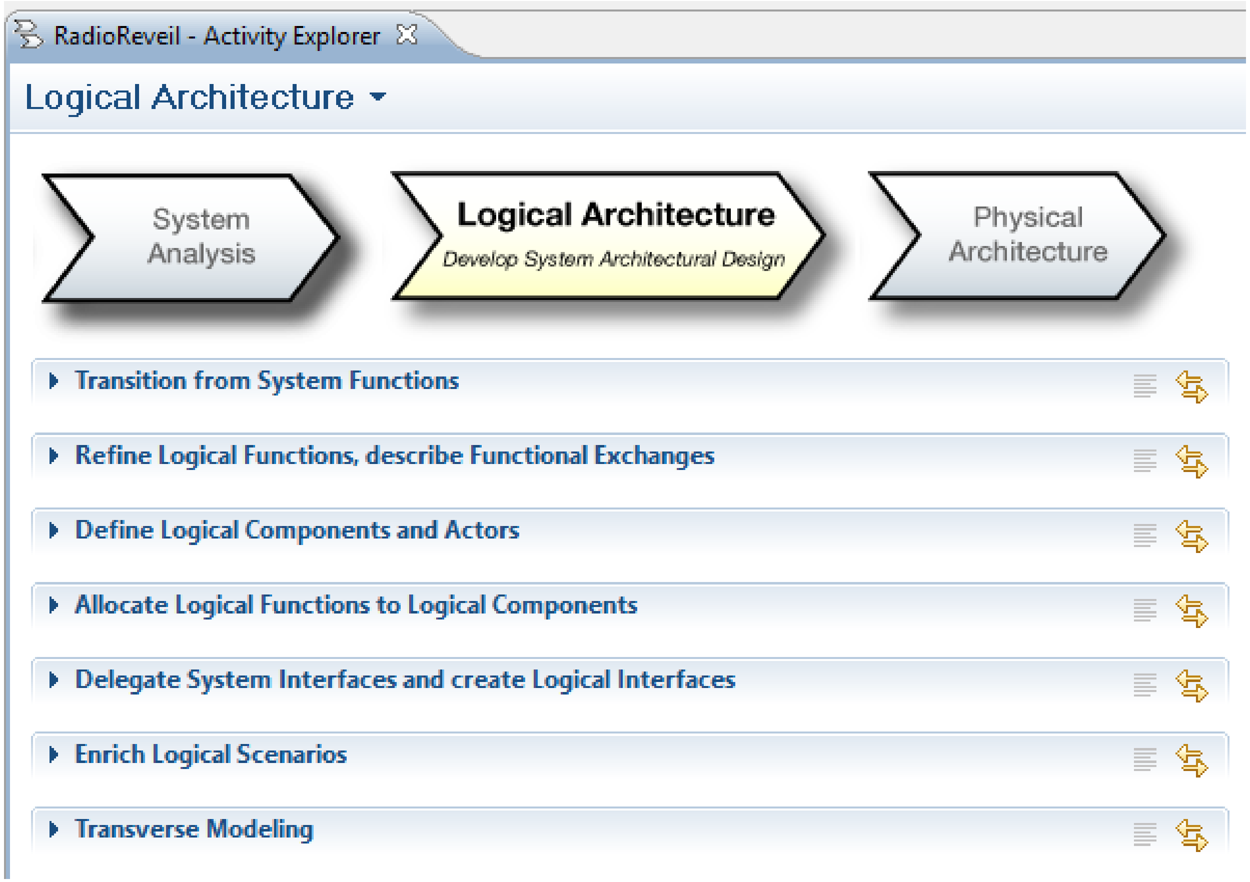


Diagrams Viewer

type filter text

- Common
  - Class Diagram Blank
    - [SCDB] Types - Class Diagram Blank
  - Exchange Scenario
    - [SES] Alarme - Exchange Scenario
  - Functional Chain Description
    - [SFCD] Alarme - System Functional Chain Description
  - Modes and States
    - [SM&S] Radio-réveil - Modes & States
  - State Machine and Capability Function Matrix
    - System State Machine and Function Matrix
- System Analysis
  - System Actors - Operational Actors/Operational Entities
    - System Actors - Operational Actors/Operational Entities
  - System Architecture Blank
    - [SAB] Radio-réveil - System Architecture Blank
    - [SAB] Radio-réveil avec FC - System Architecture Blank
    - [SAB] Vue synthétique du Radio-réveil - System Architecture Blank
  - System Data Flow Blank
    - [SDFB] Alarme - System Data Flow Blank
    - [SDFB] Paramètres radio - System Data Flow Blank
  - System Functions - Operational Activities
    - Radio Réveil System Functions - Operational Activities

Architecture Logique (LA)



RadioReveil - Activity Explorer

Logical Architecture

System Analysis

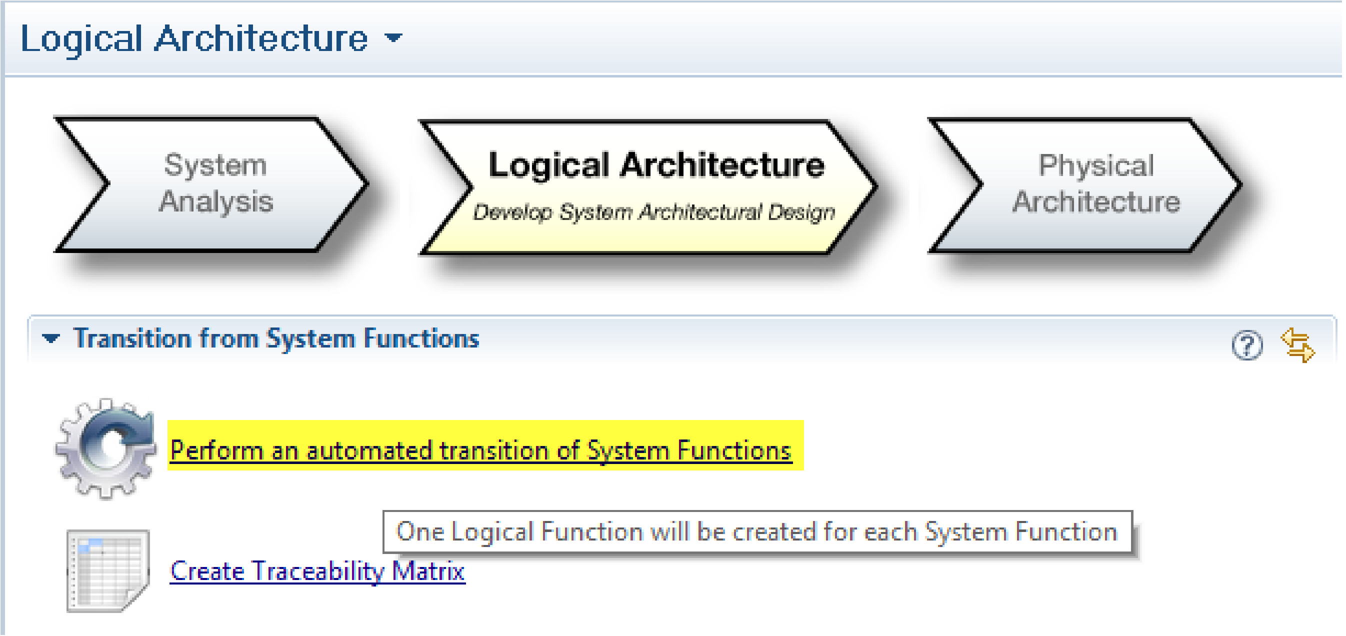
Logical Architecture

Develop System Architectural Design

Physical Architecture

- Transition from System Functions
- Refine Logical Functions, describe Functional Exchanges
- Define Logical Components and Actors
- Allocate Logical Functions to Logical Components
- Delegate System Interfaces and create Logical Interfaces
- Enrich Logical Scenarios
- Transverse Modeling

Transition SA -> LA


Logical Architecture

System Analysis

Logical Architecture

Develop System Architectural Design

Physical Architecture

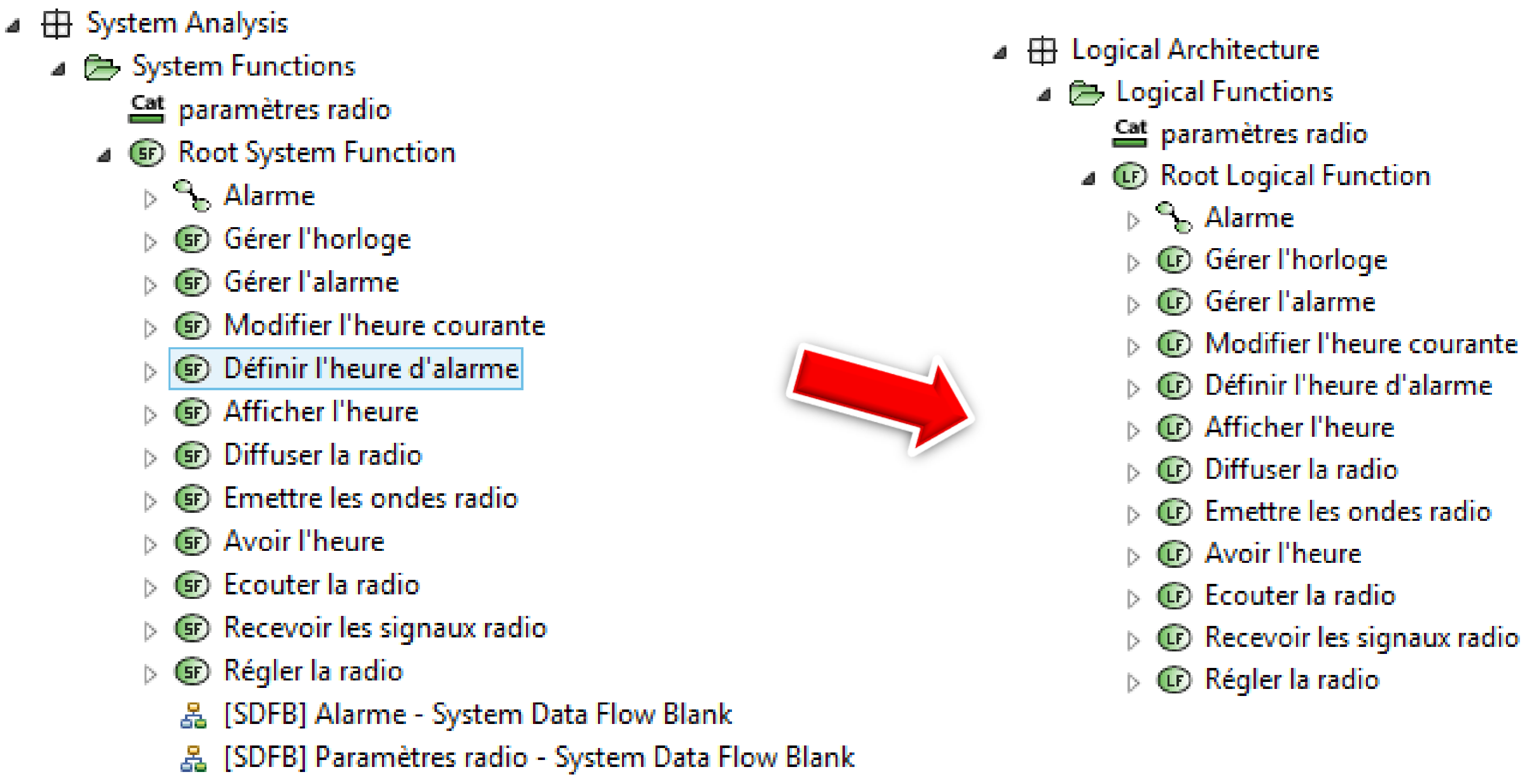
Transition from System Functions

Perform an automated transition of System Functions

One Logical Function will be created for each System Function

Create Traceability Matrix

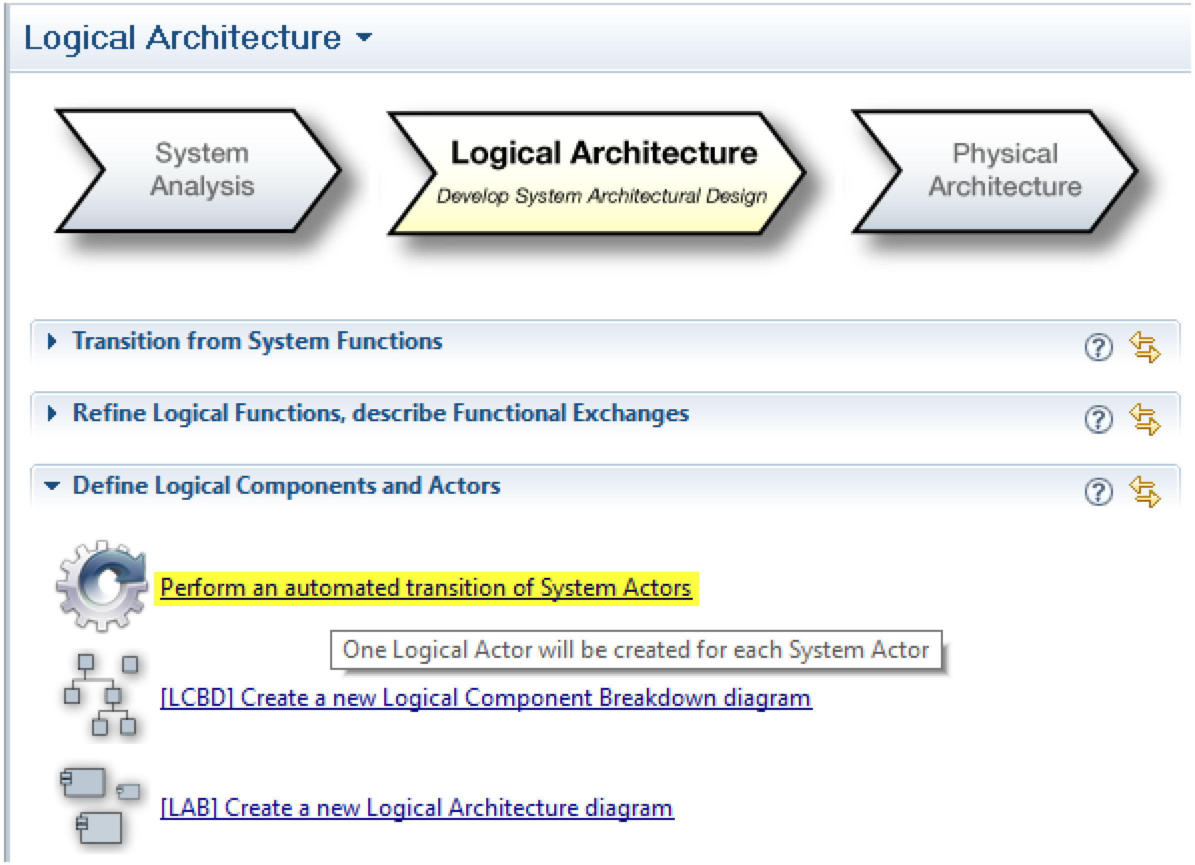
Transition SA -> LA



- System Analysis
  - System Functions
    - paramètres radio
    - Root System Function
      - Alarme
      - Gérer l'horloge
      - Gérer l'alarme
      - Modifier l'heure courante
      - Définir l'heure d'alarme
      - Afficher l'heure
      - Diffuser la radio
      - Emettre les ondes radio
      - Avoir l'heure
      - Ecouter la radio
      - Recevoir les signaux radio
      - Régler la radio
      - [SDFB] Alarme - System Data Flow Blank
      - [SDFB] Paramètres radio - System Data Flow Blank

- Logical Architecture
  - Logical Functions
    - paramètres radio
    - Root Logical Function
      - Alarme
      - Gérer l'horloge
      - Gérer l'alarme
      - Modifier l'heure courante
      - Définir l'heure d'alarme
      - Afficher l'heure
      - Diffuser la radio
      - Emettre les ondes radio
      - Avoir l'heure
      - Ecouter la radio
      - Recevoir les signaux radio
      - Régler la radio

Transition SA -> LA



Logical Architecture

System Analysis
Logical Architecture
Develop System Architectural Design
Physical Architecture

- Transition from System Functions
- Refine Logical Functions, describe Functional Exchanges
- Define Logical Components and Actors

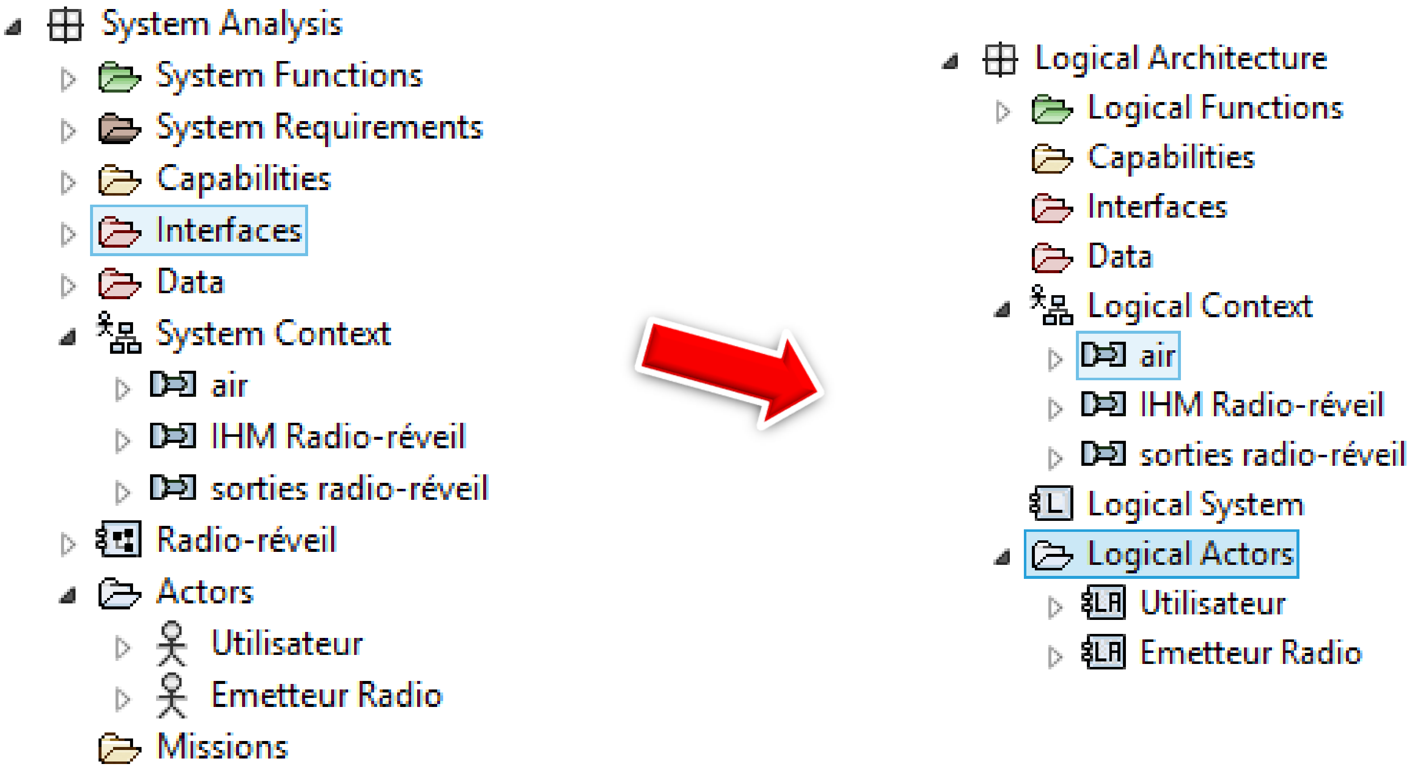
Perform an automated transition of System Actors

One Logical Actor will be created for each System Actor

[LCBD] Create a new Logical Component Breakdown diagram

[LAB] Create a new Logical Architecture diagram

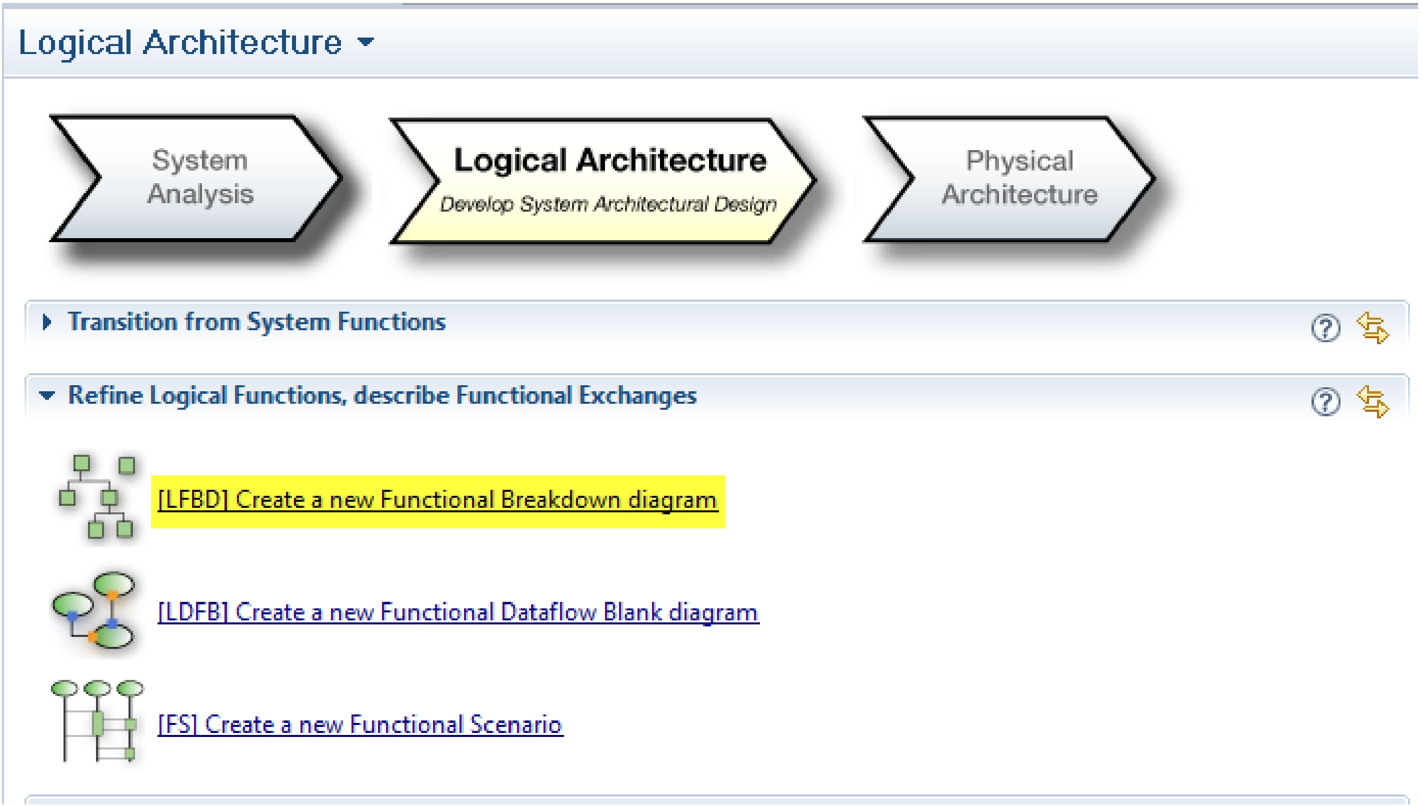
Transition SA -> LA



- System Analysis
  - System Functions
  - System Requirements
  - Capabilities
  - Interfaces
  - Data
  - System Context
    - air
    - IHM Radio-réveil
    - sorties radio-réveil
  - Radio-réveil
  - Actors
    - Utilisateur
    - Emetteur Radio
  - Missions

- Logical Architecture
  - Logical Functions
  - Capabilities
  - Interfaces
  - Data
  - Logical Context
    - air
    - IHM Radio-réveil
    - sorties radio-réveil
  - Logical System
  - Logical Actors
    - Utilisateur
    - Emetteur Radio

LFBD : Décomposition des Fonct. Logiques



Logical Architecture

System Analysis
Logical Architecture
Develop System Architectural Design
Physical Architecture

Transition from System Functions

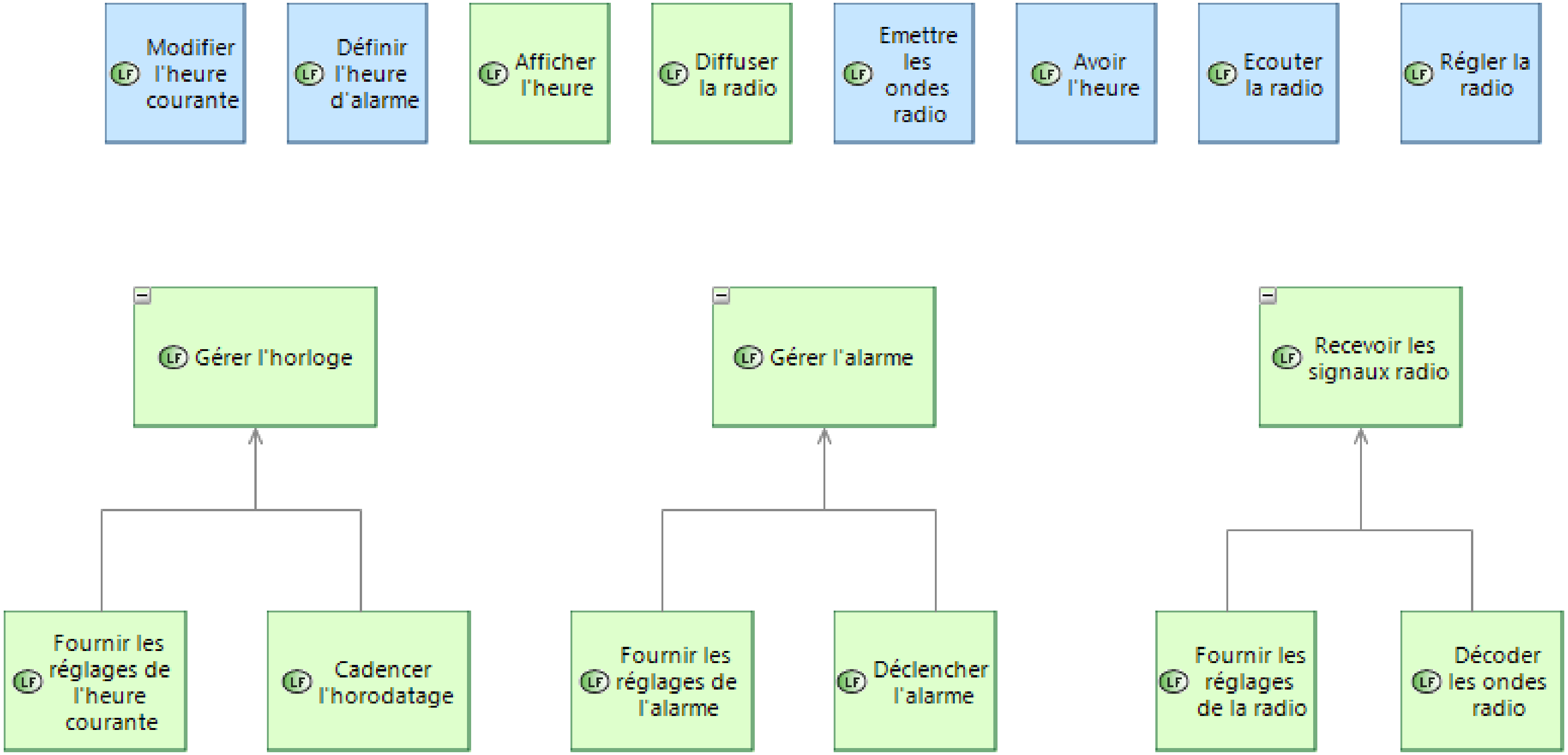
Refine Logical Functions, describe Functional Exchanges

[LFBD] Create a new Functional Breakdown diagram

[LDFB] Create a new Functional Dataflow Blank diagram

[FS] Create a new Functional Scenario

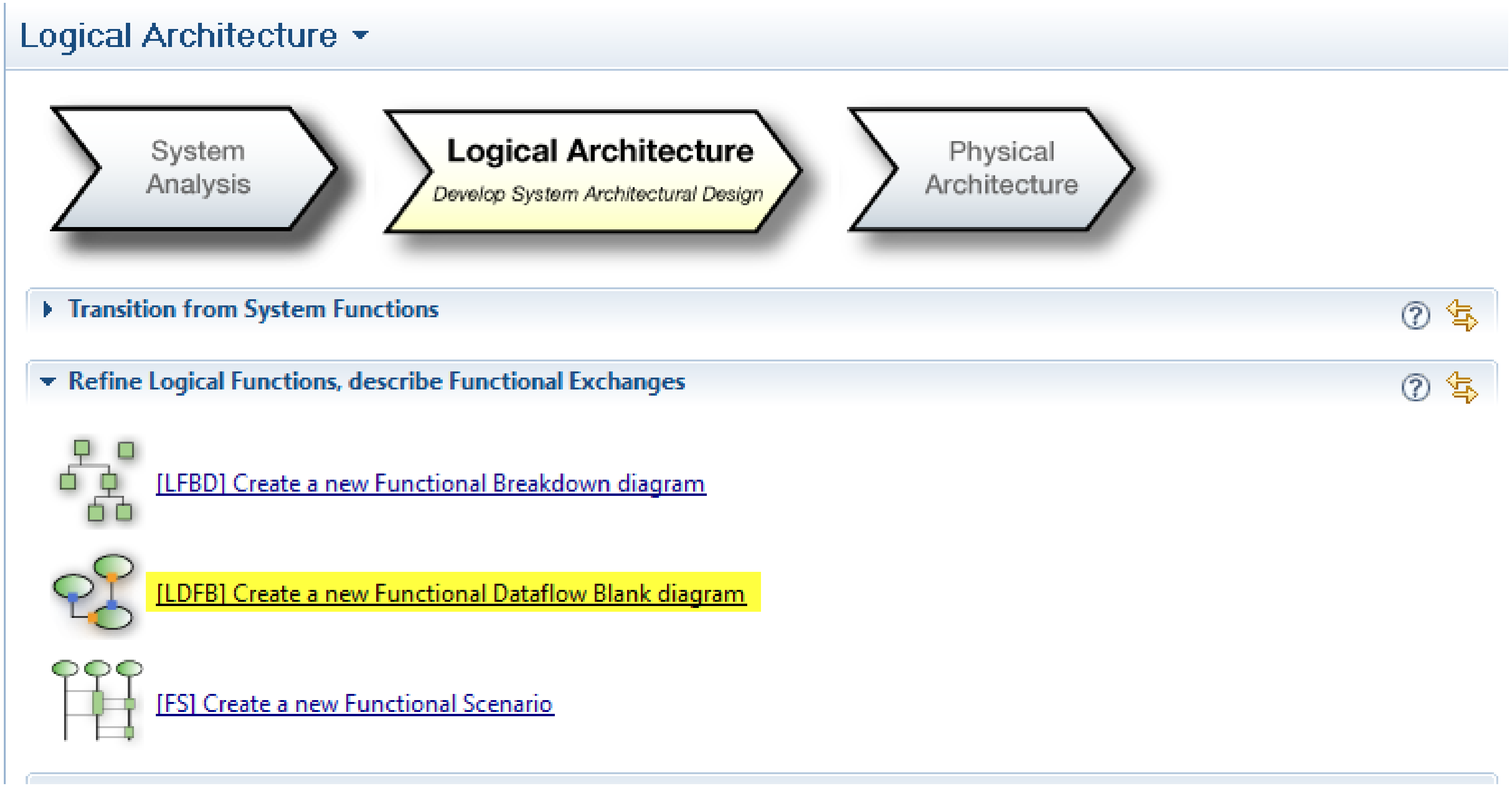
LFBD : Décomposition des Fonct. Logiques



- Modifier l'heure courante
- Définir l'heure d'alarme
- Afficher l'heure
- Diffuser la radio
- Emettre les ondes radio
- Avoir l'heure
- Ecouter la radio
- Régler la radio

- Gérer l'horloge
  - Fournir les réglages de l'heure courante
  - Cadencer l'horodatage
- Gérer l'alarme
  - Fournir les réglages de l'alarme
  - Déclencher l'alarme
- Recevoir les signaux radio
  - Fournir les réglages de la radio
  - Décoder les ondes radio

LDFB : Data Flow au niveau Logique



Logical Architecture

System Analysis
Logical Architecture
Develop System Architectural Design
Physical Architecture

Transition from System Functions

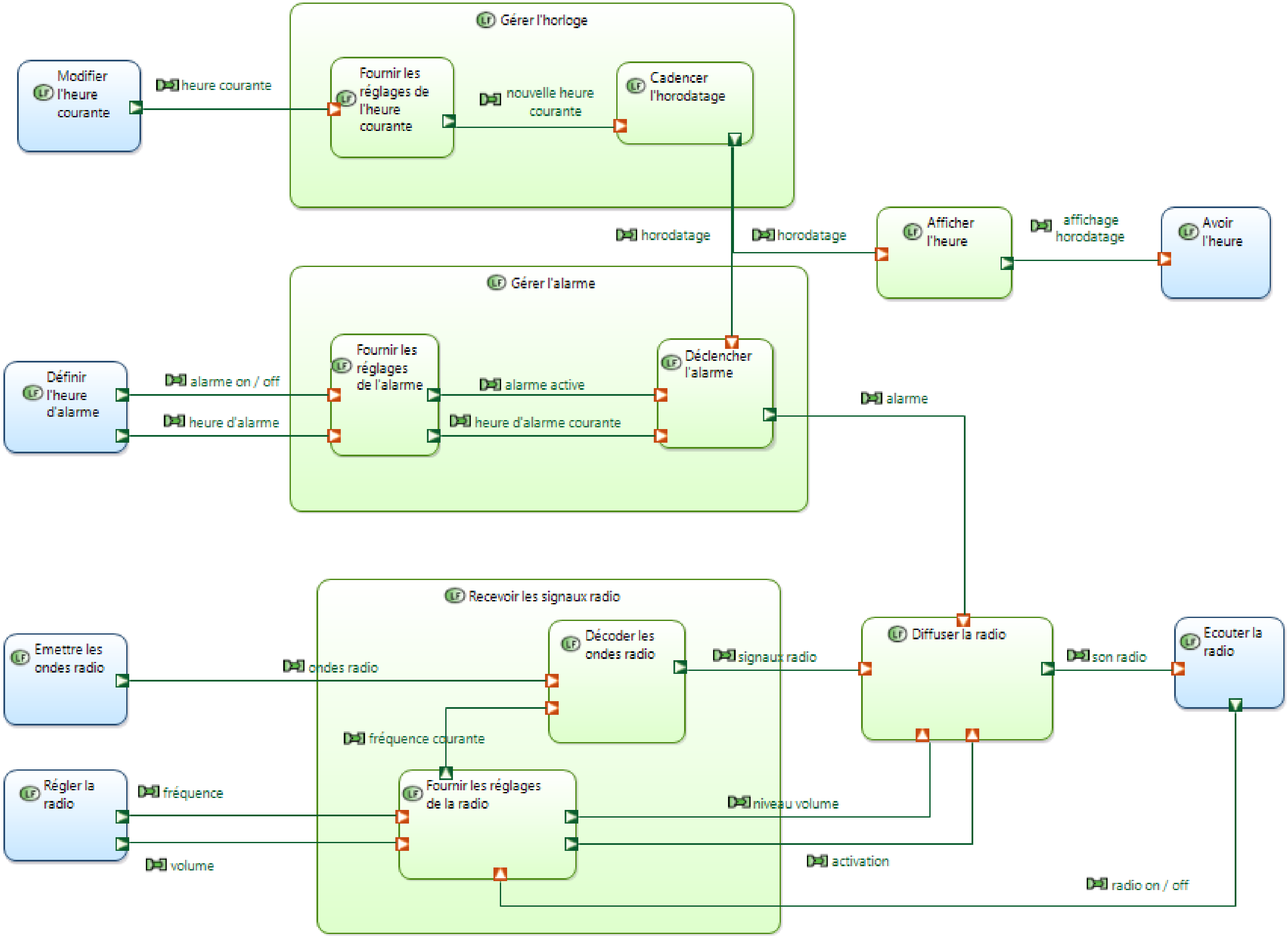
Refine Logical Functions, describe Functional Exchanges

[LFBD] Create a new Functional Breakdown diagram

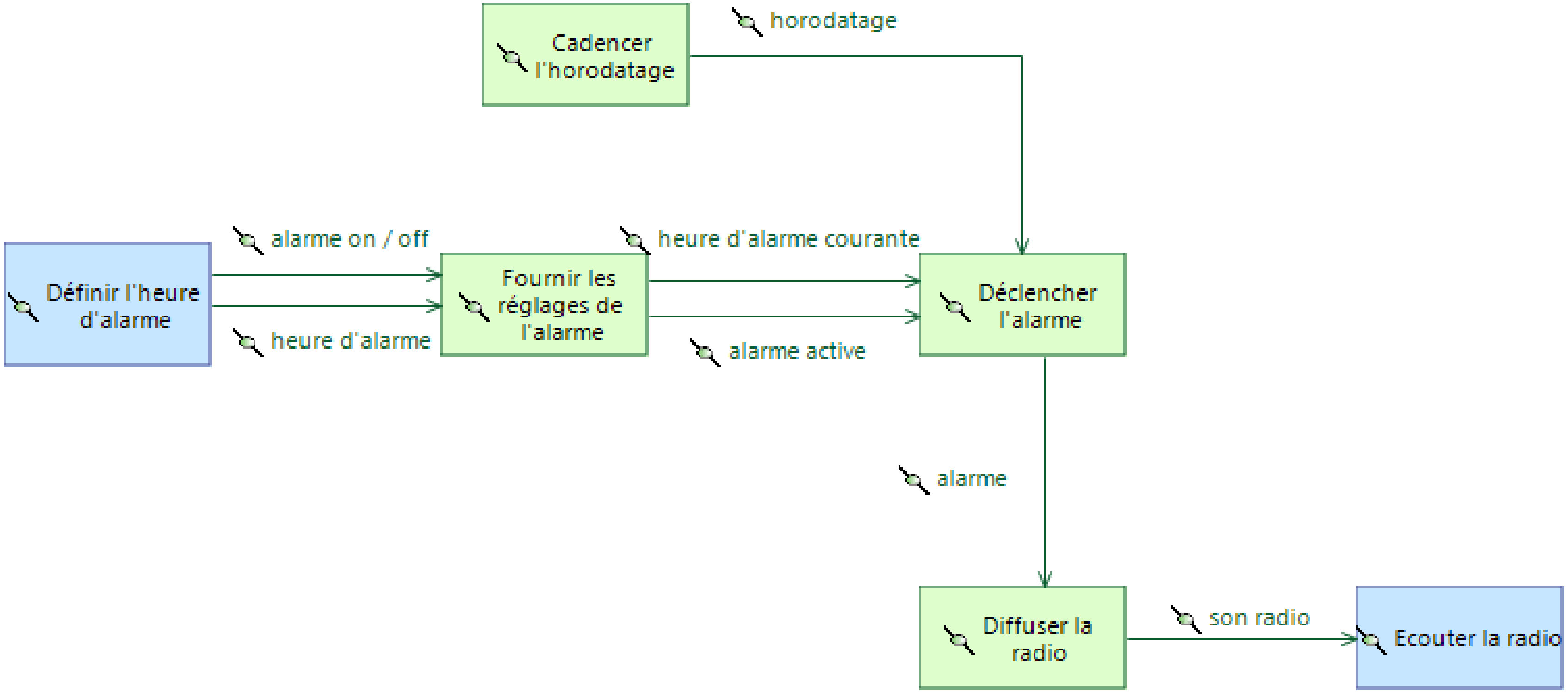
[LDFB] Create a new Functional Dataflow Blank diagram

[FS] Create a new Functional Scenario

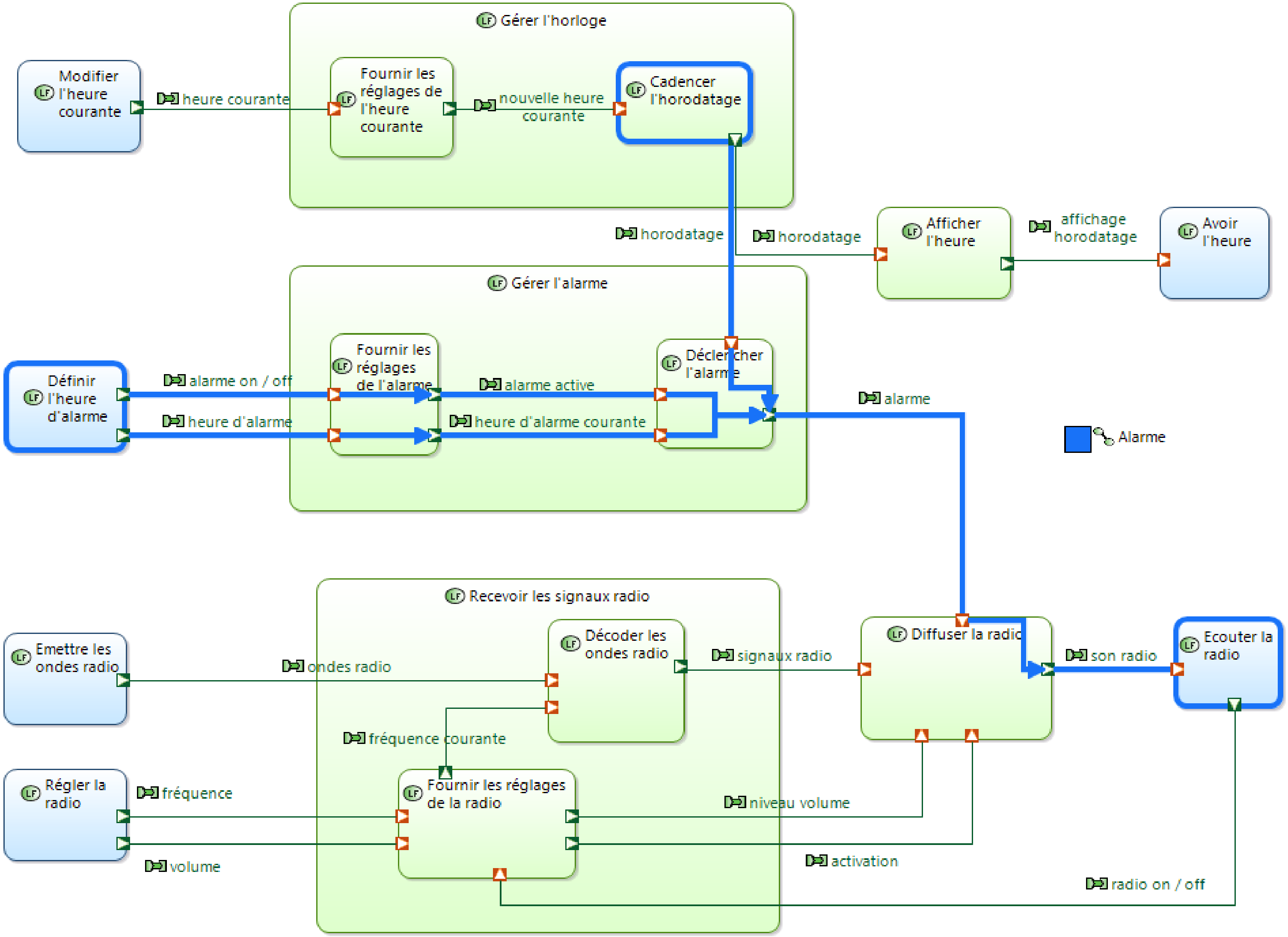
LDFB : après modification


Gérer l'horloge
Modifier l'heure courante
heure courante
Fournir les réglages de l'heure courante
nouvelle heure courante
Cadencer l'horodatage
horodatage
horodatage
Afficher l'heure
affichage horodatage
Avoir l'heure
Gérer l'alarme
Définir l'heure d'alarme
alarme on / off
heure d'alarme
Fournir les réglages de l'alarme
alarme active
heure d'alarme courante
Déclencher l'alarme
alarme
Recevoir les signaux radio
Emettre les ondes radio
ondes radio
Décoder les ondes radio
signaux radio
Diffuser la radio
son radio
Ecouter la radio
fréquence courante
Régler la radio
fréquence
volume
Fournir les réglages de la radio
niveau volume
activation
radio on / off

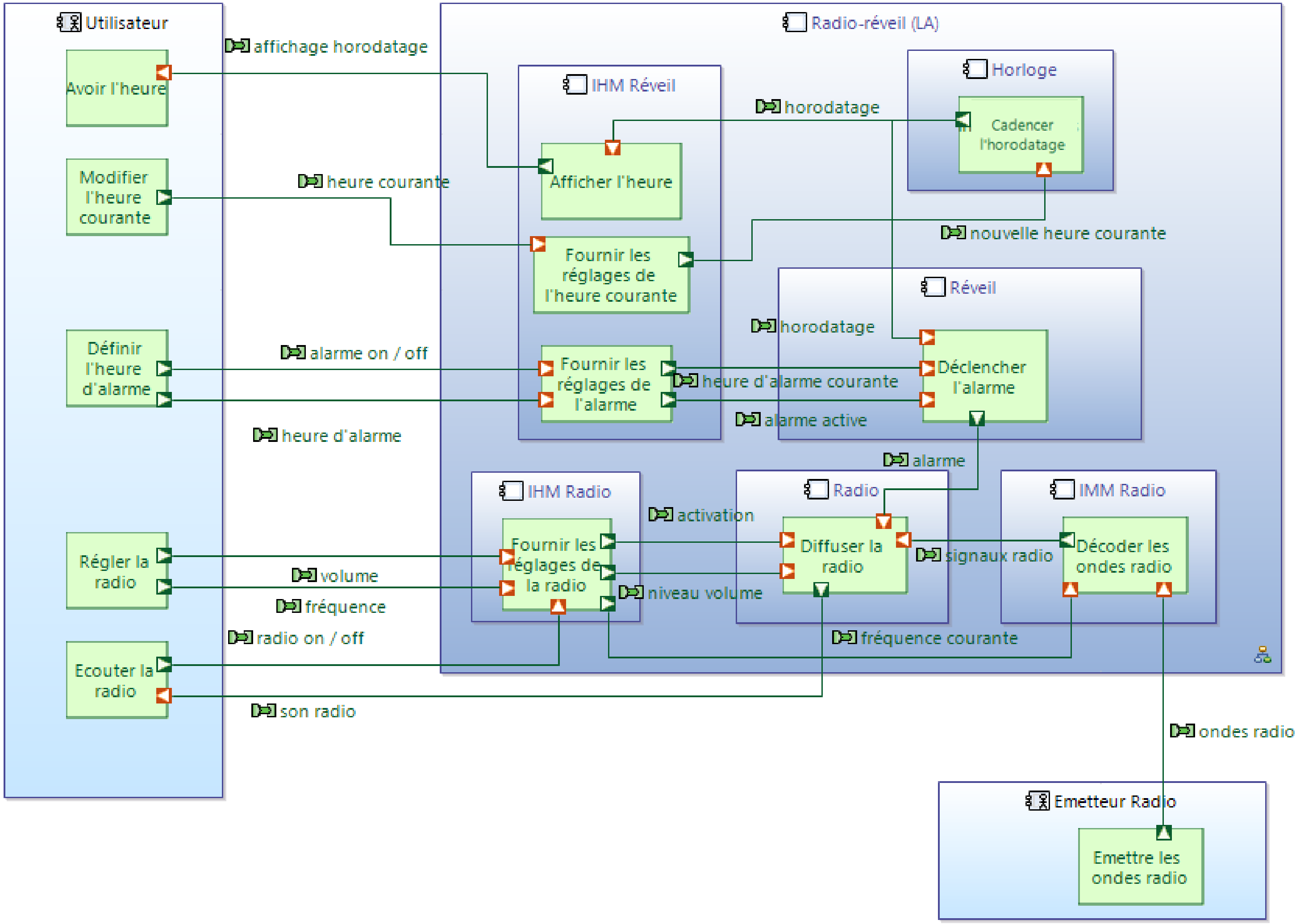
LFCD : FC corrigée


Cadencer l'horodatage
horodatage
alarme on / off
heure d'alarme courante
Définir l'heure d'alarme
Fournir les réglages de l'alarme
Déclencher l'alarme
heure d'alarme
alarme active
alarme
Diffuser la radio
son radio
Ecouter la radio

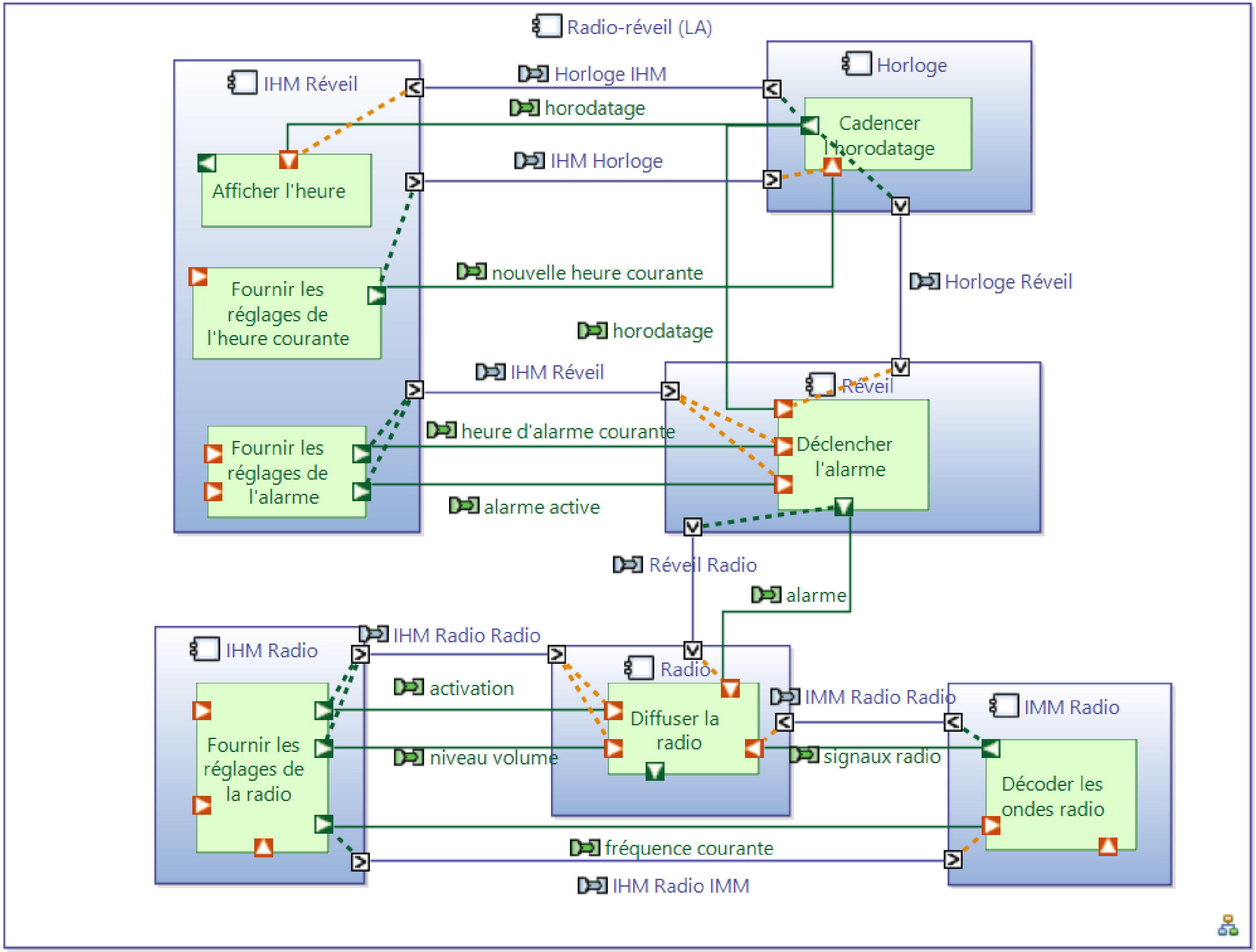
LDFB : FC valide après correction


Gérer l'horloge
Modifier l'heure courante
heure courante
Fournir les réglages de l'heure courante
nouvelle heure courante
Cadencer l'horodatage
horodatage
horodatage
Afficher l'heure
affichage horodatage
Avoir l'heure
Gérer l'alarme
Définir l'heure d'alarme
alarme on / off
heure d'alarme
Fournir les réglages de l'alarme
alarme active
heure d'alarme courante
Déclencher l'alarme
alarme
Alarme
Recevoir les signaux radio
Emettre les ondes radio
ondes radio
Décoder les ondes radio
signaux radio
Diffuser la radio
son radio
Ecouter la radio
fréquence courante
Régler la radio
fréquence
volume
Fournir les réglages de la radio
niveau volume
activation
radio on / off

LAB : Allocation des Fonctions


Utilisateur
Avoir l'heure
Modifier l'heure courante
Définir l'heure d'alarme
Régler la radio
Ecouter la radio
affichage horodatage
heure courante
alarme on / off
heure d'alarme
volume
fréquence
radio on / off
son radio
Radio-réveil (LA)
IHM Réveil
Afficher l'heure
Fournir les réglages de l'heure courante
Fournir les réglages de l'alarme
Horloge
Cadencer l'horodatage
horodatage
nouvelle heure courante
Réveil
horodatage
Déclencher l'alarme
heure d'alarme courante
alarme active
alarme
IHM Radio
Fournir les réglages de la radio
activation
niveau volume
Radio
Diffuser la radio
signaux radio
IMM Radio
Décoder les ondes radio
fréquence courante
ondes radio
Emetteur Radio
Emettre les ondes radio

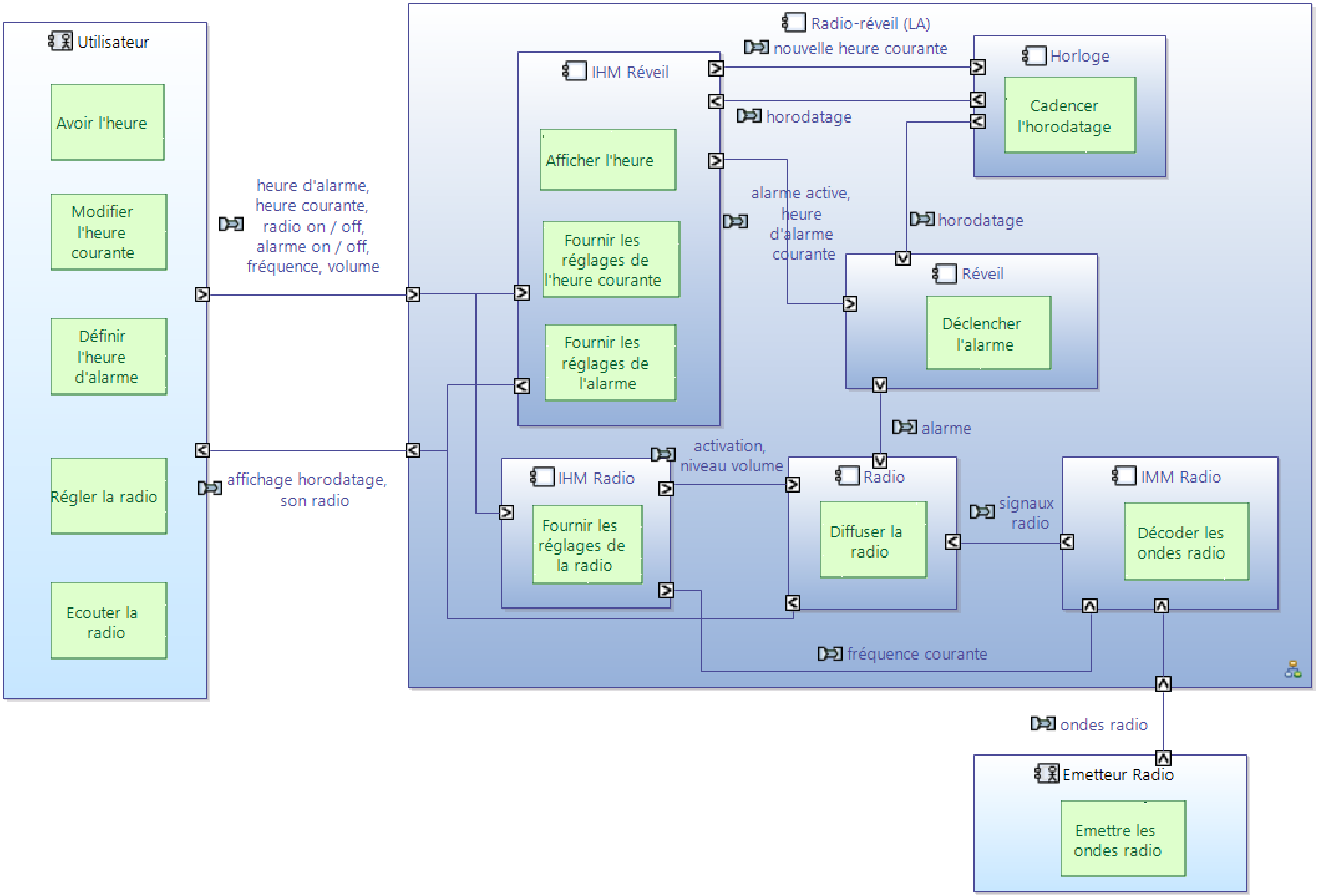
LAB : CE internes entre LCs



Radio-réveil (LA)
IHM Réveil
Afficher l'heure
Fournir les réglages de l'heure courante
Fournir les réglages de l'alarme
Horloge
Cadencer l'horodatage
Horloge IHM
horodatage
IHM Horloge
nouvelle heure courante
Horloge Réveil
horodatage
IHM Réveil
heure d'alarme courante
alarme active
Réveil
Déclencher l'alarme
Réveil Radio
alarme
IHM Radio
Fournir les réglages de la radio
IHM Radio Radio
activation
niveau volume
Radio
Diffuser la radio
IMM Radio Radio
signaux radio
IMM Radio
Décoder les ondes radio
fréquence courante
IHM Radio IMM

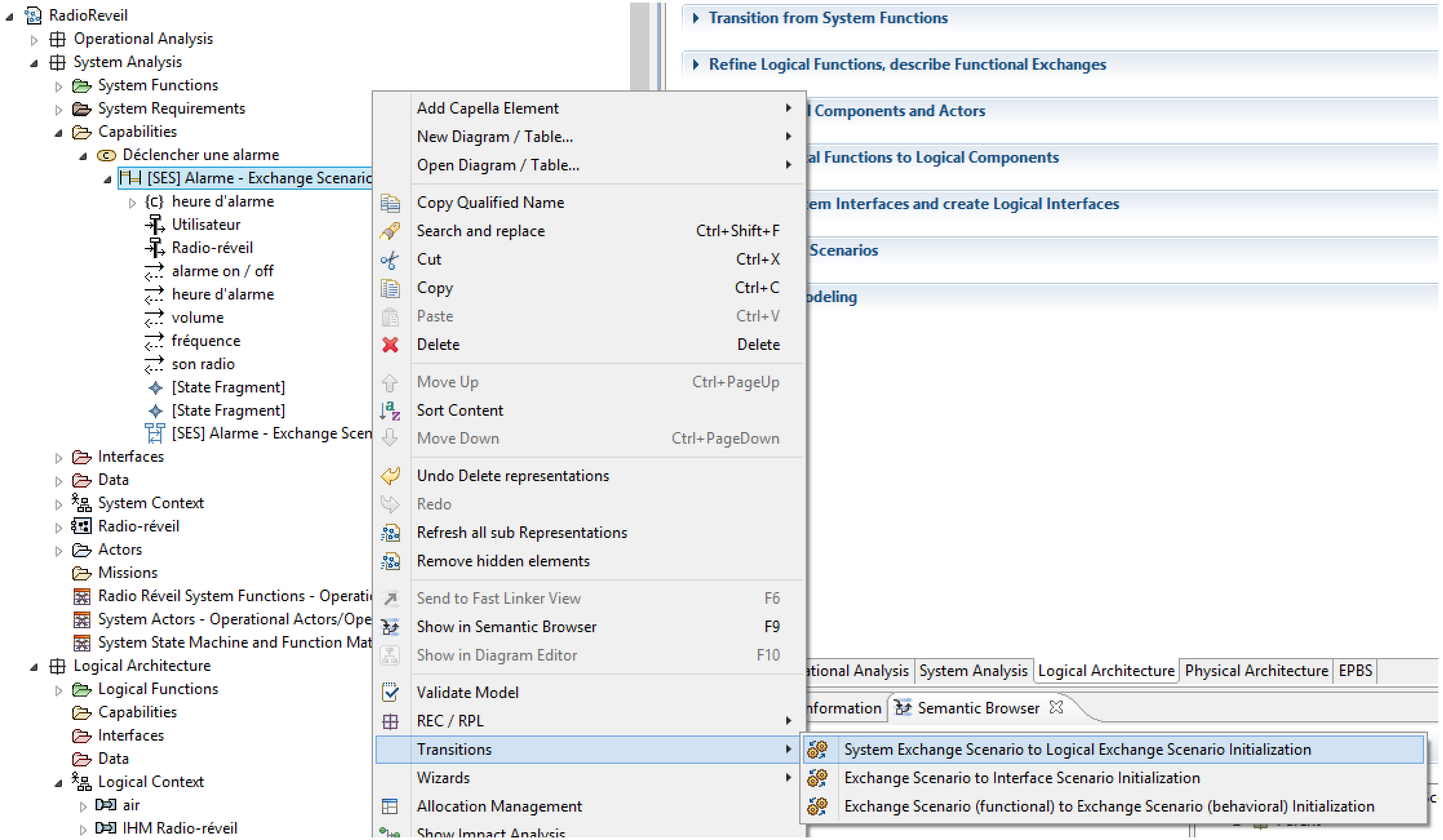
Pascal Roques Formation & Conseil

LAB simplifié

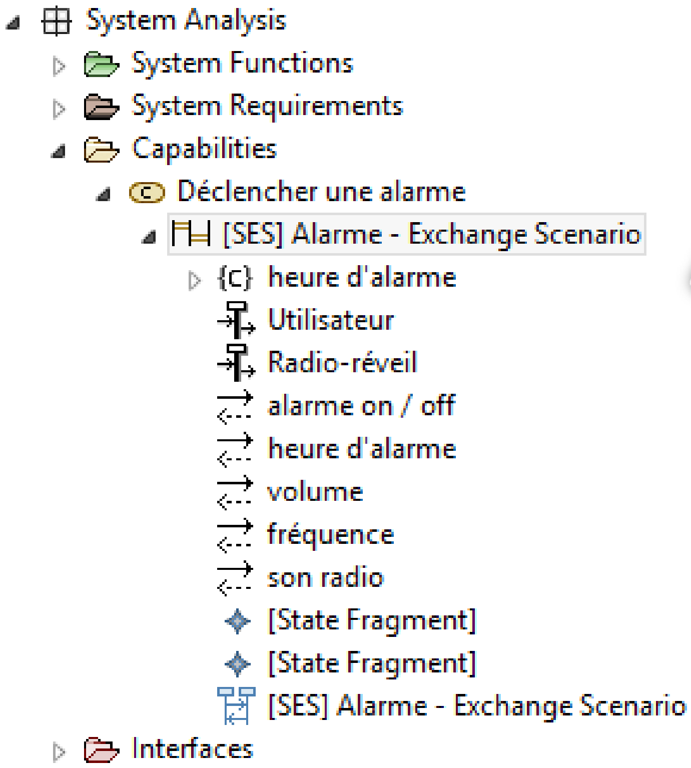

Utilisateur
Avoir l'heure
Modifier l'heure courante
Définir l'heure d'alarme
Régler la radio
Ecouter la radio
heure d'alarme, heure courante, radio on / off, alarme on / off, fréquence, volume
affichage horodatage, son radio
Radio-réveil (LA)
IHM Réveil
Afficher l'heure
Fournir les réglages de l'heure courante
Fournir les réglages de l'alarme
nouvelle heure courante
horodatage
Horloge
Cadencer l'horodatage
alarme active, heure d'alarme courante
horodatage
Réveil
Déclencher l'alarme
alarme
activation, niveau volume
IHM Radio
Fournir les réglages de la radio
Radio
Diffuser la radio
signaux radio
IMM Radio
Décoder les ondes radio
fréquence courante
ondes radio
Emetteur Radio
Emettre les ondes radio

Clarity

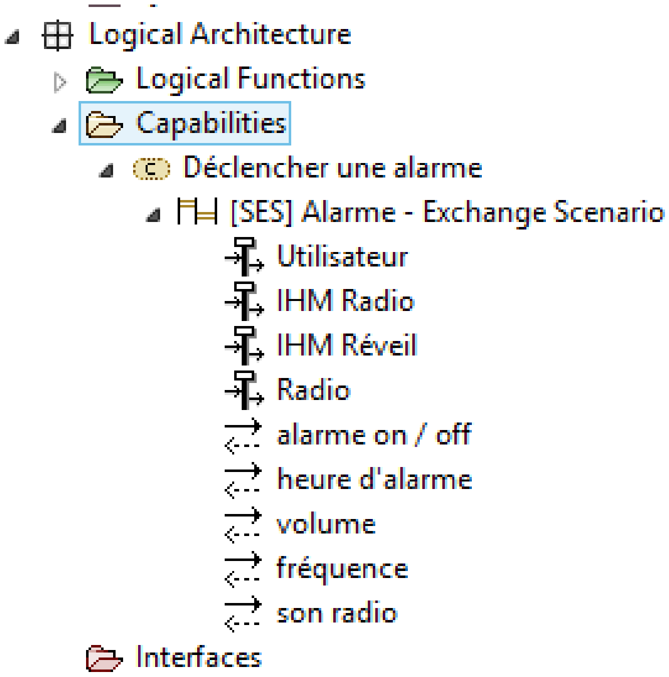
Scénario de niveau LA par transition du SA


RadioReveil
Operational Analysis
System Analysis
System Functions
System Requirements
Capabilities
Déclencher une alarme
[SES] Alarme - Exchange Scenario
{C} heure d'alarme
Utilisateur
Radio-réveil
alarme on / off
heure d'alarme
volume
fréquence
son radio
[State Fragment]
[State Fragment]
[SES] Alarme - Exchange Scen
Interfaces
Data
System Context
Radio-réveil
Actors
Missions
Radio Réveil System Functions - Operati
System Actors - Operational Actors/Ope
System State Machine and Function Mat
Logical Architecture
Logical Functions
Capabilities
Interfaces
Data
Logical Context
air
IHM Radio-réveil
Add Capella Element
New Diagram / Table...
Open Diagram / Table...
Copy Qualified Name
Search and replace Ctrl+Shift+F
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete Delete
Move Up Ctrl+PageUp
Sort Content
Move Down Ctrl+PageDown
Undo Delete representations
Redo
Refresh all sub Representations
Remove hidden elements
Send to Fast Linker View F6
Show in Semantic Browser F9
Show in Diagram Editor F10
Validate Model
REC / RPL
Transitions
Wizards
Allocation Management
Show Impact Analysis
System Exchange Scenario to Logical Exchange Scenario Initialization
Exchange Scenario to Interface Scenario Initialization
Exchange Scenario (functional) to Exchange Scenario (behavioral) Initialization
Transition from System Functions
Refine Logical Functions, describe Functional Exchanges
l Components and Actors
al Functions to Logical Components
em Interfaces and create Logical Interfaces
Scenarios
odeling
ational Analysis
System Analysis
Logical Architecture
Physical Architecture
EPBS
nformation
Semantic Browser

Scénario de niveau LA par transition du SA

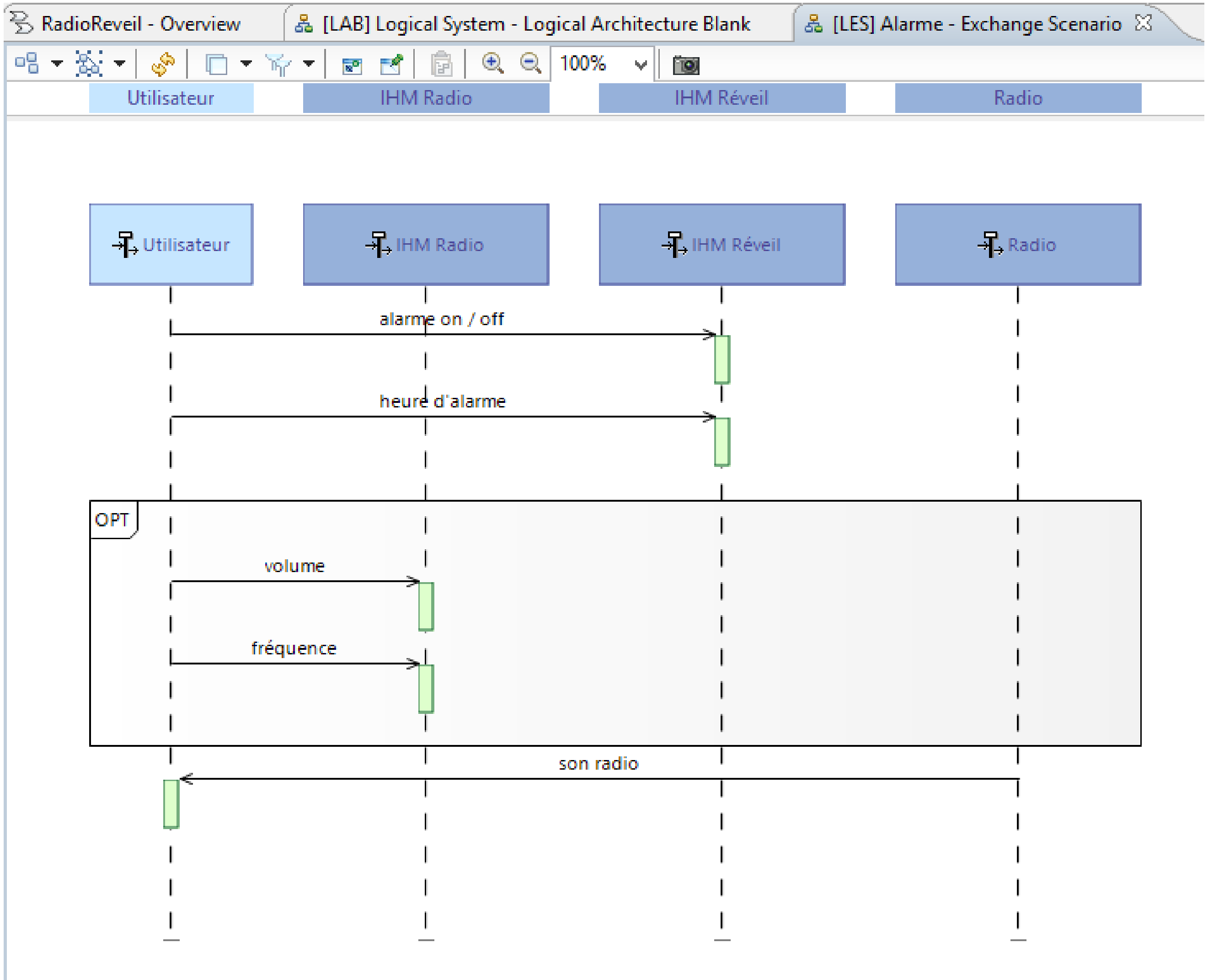


- System Analysis
  - System Functions
  - System Requirements
  - Capabilities
    - Déclencher une alarme
      - [SES] Alarme - Exchange Scenario
        - {C} heure d'alarme
        - Utilisateur
        - Radio-réveil
        - alarme on / off
        - heure d'alarme
        - volume
        - fréquence
        - son radio
        - [State Fragment]
        - [State Fragment]
        - [SES] Alarme - Exchange Scenario
  - Interfaces

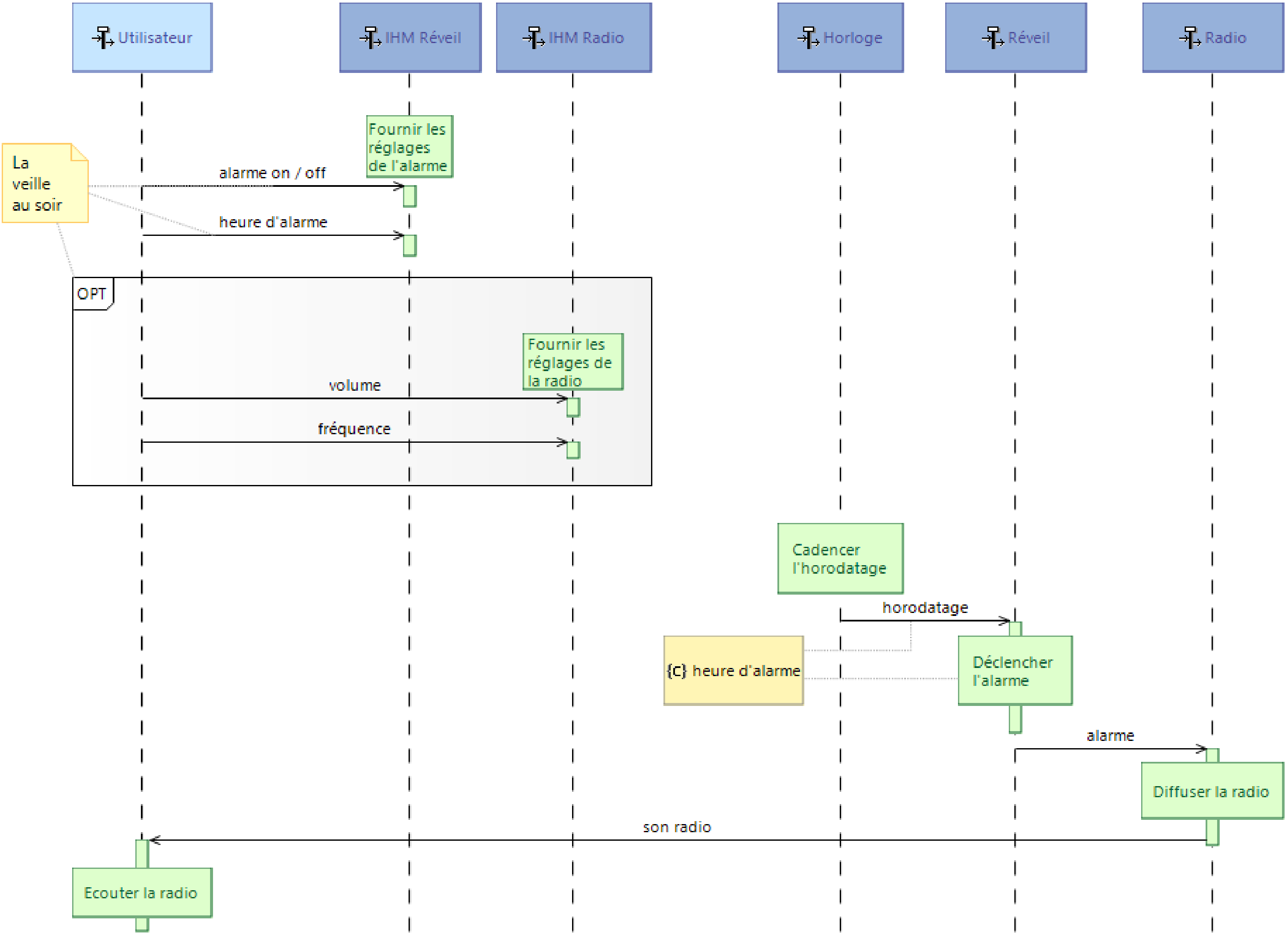


- Logical Architecture
  - Logical Functions
  - Capabilities
    - Déclencher une alarme
      - [SES] Alarme - Exchange Scenario
        - Utilisateur
        - IHM Radio
        - IHM Réveil
        - Radio
        - alarme on / off
        - heure d'alarme
        - volume
        - fréquence
        - son radio
  - Interfaces

LES initialisé à partir du SES


RadioReveil - Overview
[LAB] Logical System - Logical Architecture Blank
[LES] Alarme - Exchange Scenario
100%
Utilisateur
IHM Radio
IHM Réveil
Radio
alarme on / off
heure d'alarme
OPT
volume
fréquence
son radio

LES finalisé


Utilisateur
IHM Réveil
IHM Radio
Horloge
Réveil
Radio
La veille au soir
Fournir les réglages de l'alarme
alarme on / off
heure d'alarme
OPT
Fournir les réglages de la radio
volume
fréquence
Cadencer l'horodatage
horodatage
{C} heure d'alarme
Déclencher l'alarme
alarme
Diffuser la radio
son radio
Ecouter la radio

Pour en savoir plus…

www.polarsys.org/capella/index.html

- www.prfc.fr

- www.incose.org/
- www.afis.fr