

# jUCMNav Report



<http://softwareengineering.ca/jucmnav>

Title:	WirelessIN-Integrated
URN Model Name:	WirelessIN
Description:	Example model for separate GRL and UCM analysis of (3) architectural alternatives for the location of service logic and data in a simple wireless system.
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Creation Date:	July 6, 2009 02:35:39 PM EDT
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Specification Version:	68

## UCM Scenario Groups documentation

### - UCMarchAlternatives:

1. ConnectionAccepted
2. ConnectionRejected

### Variables

1. authorized (boolean)

### Intentional Elements

1. Low Cost
2. High Performance: High performance of the system as seen by the service provider
3. Minimum Changes to Infrastructure
4. Maximum Hardware Utilisation
5. High Throughput
6. Minimum Message Exchange
7. Minimum Switch Load
8. Determine Data Location
9. Data in Service Control Point
10. Data in New Service Node
11. Service in Mobile Switch
12. Service in Service Control Point
13. Determine Service Location
14. Service Node
15. Service Nodes Ready For Sale
16. Install Service Node
17. Service Works

### Actors

1. Vendor
2. Service Provider
3. System
4. User

### Strategy Legend for Group "ArchAlternatives"

1:1-ServiceInSwitchDataInSCP

2:2-ServiceInSwitchDataInSNready













3:3-ServiceInSwitchDataInSNnotReady - Note: The UCM scenario will block here because none of the two option for Determine Data Location is satisfied.










4:4-ServiceAndDataInSCP

5:5-ServiceInSCPDataInSNnotReady - Note: the UCM does not have an architectural alternative for this option!

6:6-ServiceInSCPDataInSNready - Note: the UCM does not have an architectural alternative for this option!

Note: Trend calculated based on last 3 strategies

	Strategy Evaluations						
	1	2	3	4	5	6	Trend
Vendor (A)	0	100	-100	0	-100	100	
Service Provider (A)	46	31	48	-14	-12	-29	
System (A)	100	100	50	100	50	100	
User (A)	0	0	0	0	0	0	
Low Cost	37	-25	45	37	45	-25	
High Performance	50	50	50	-31	-31	-31	
Minimum Changes to Infrastructure	75	-50	90	75	90	-50	
Maximum Hardware Utilisation	50	50	50	50	50	50	
High Throughput	50	50	50	-31	-31	-31	
Minimum Message Exchange	100	100	100	-75	-75	-75	
Minimum Switch Load	-100	-100	-100	100	100	100	
Determine Data Location	100	100	0	100	0	100	

Data in Service Control Point	100	0	0	100	0	0	
Data in New Service Node	0	100	-100	0	-100	100	
Service in Mobile Switch	100	100	100	0	0	0	
Service in Service Control Point	0	0	0	100	100	100	
Determine Service Location	100	100	100	100	100	100	
Service Node	0	100	-100	0	-100	100	
Service Nodes Ready For Sale	0	100	-100	0	-100	100	
Install Service Node	0	100	100	0	100	100	
Service Works	0	0	0	0	0	0	

## ServiceProvider

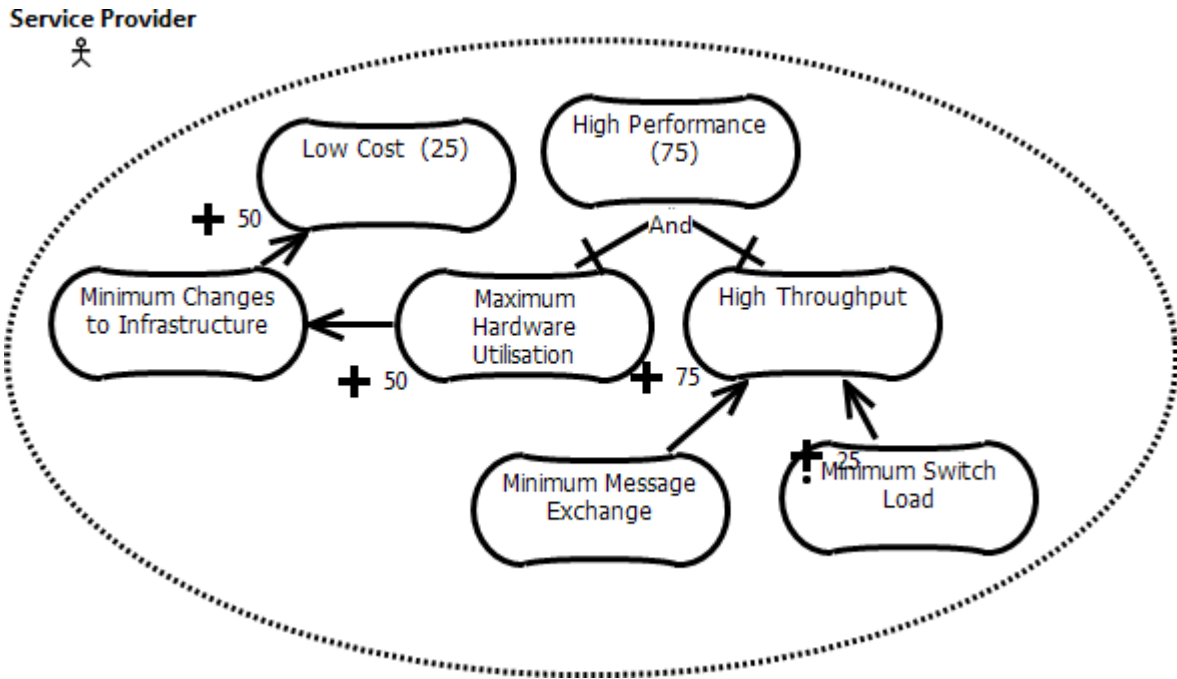


Figure 1 - ServiceProvider

## Intentional Elements

High Performance: High performance of the system as seen by the service provider

## RootScenario

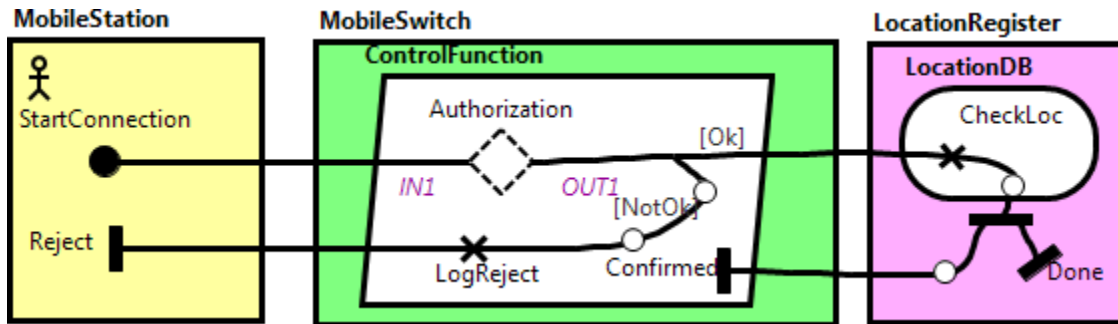


Figure 2 - RootScenario

## Description

This is a connection request scenario, which can be rejected.

## Responsibilities

LogReject

Expression: `_GRL_Service_Works = -100;`

CheckLoc: Location Registration Function (LHR)

Expression: `_GRL_Service_Works = 100;`

## Stubs

Dynamic Stub - Authorization

Plugin Map - SvcInSwitchDataInSCP

### Input Bindings:

`IN 1 <-> StartPoint`

### Output Bindings:

`OUT 1 <-> EndPoint`

### Precondition:

Expression: `_GRL_Service_in_Mobile_Switch = 100`

`&&`

`_GRL_Data_in_Service_Control_Point = 100`

Transaction: false

Probability: 1.0

Plugin Map - SvcAndDataInSCP

**Input Bindings:**

IN 1 <-> StartPoint

**Output Bindings:**

OUT 1 <-> EndPoint

**Precondition:**

Expression: \_GRL\_Service\_in\_Service\_Control\_Point = 100

&&

\_GRL\_Data\_in\_Service\_Control\_Point = 100

Transaction: false

Probability: 1.0

Plugin Map - SvcInSwitchDataInSN

**Input Bindings:**

IN 1 <-> StartPoint

**Output Bindings:**

OUT 1 <-> EndPoint

**Precondition:**

Expression: \_GRL\_Service\_in\_Mobile\_Switch = 100

&&

\_GRL\_Data\_in\_New\_Service\_Node = 100

Transaction: false

Probability: 1.0

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**Or Fork Description**

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[Ok] ==> authorized (probability: 1.0)

[NotOk] ==> !authorized (probability: 1.0)

## SvcInSwitchDataInSN

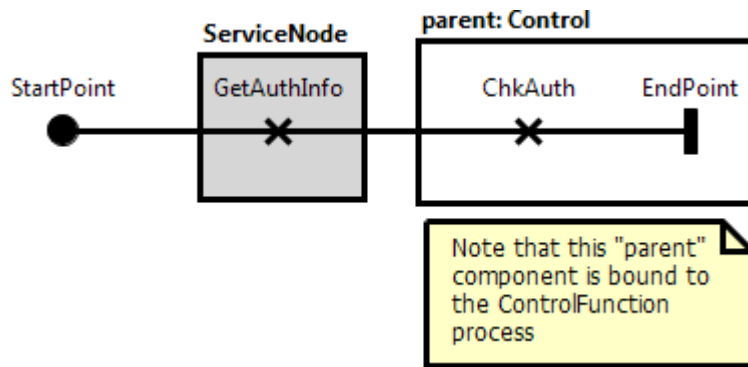


Figure 3 - SvcInSwitchDataInSN

## Responsibilities

GetAuthInfo: Gets the authorization information

ChkAuth: Checks (determines) the user location



## SvcInSwitchDataInSCP

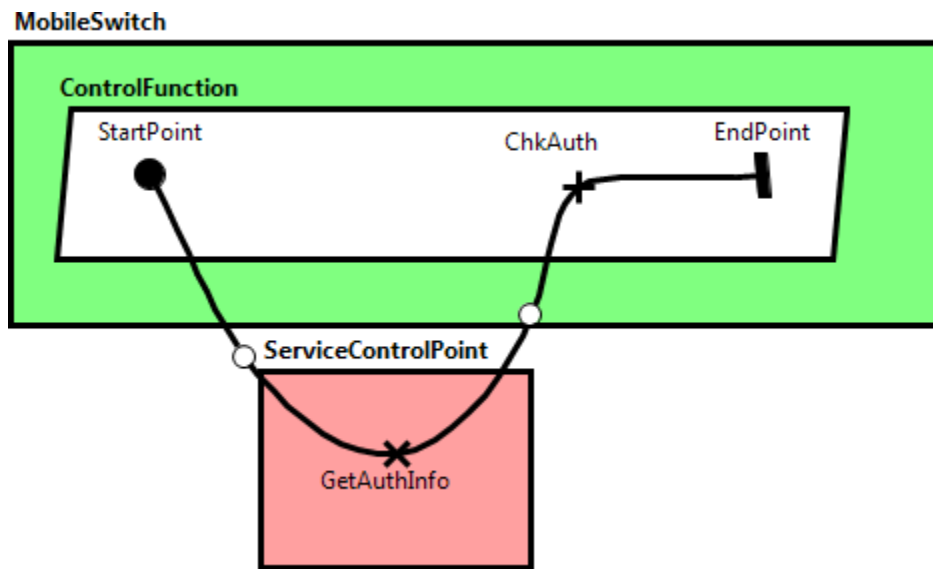


Figure 4 - SvcInSwitchDataInSCP

### Responsibilities

GetAuthInfo: Gets the authorization information

ChkAuth: Checks (determines) the user location

**GlobalView**

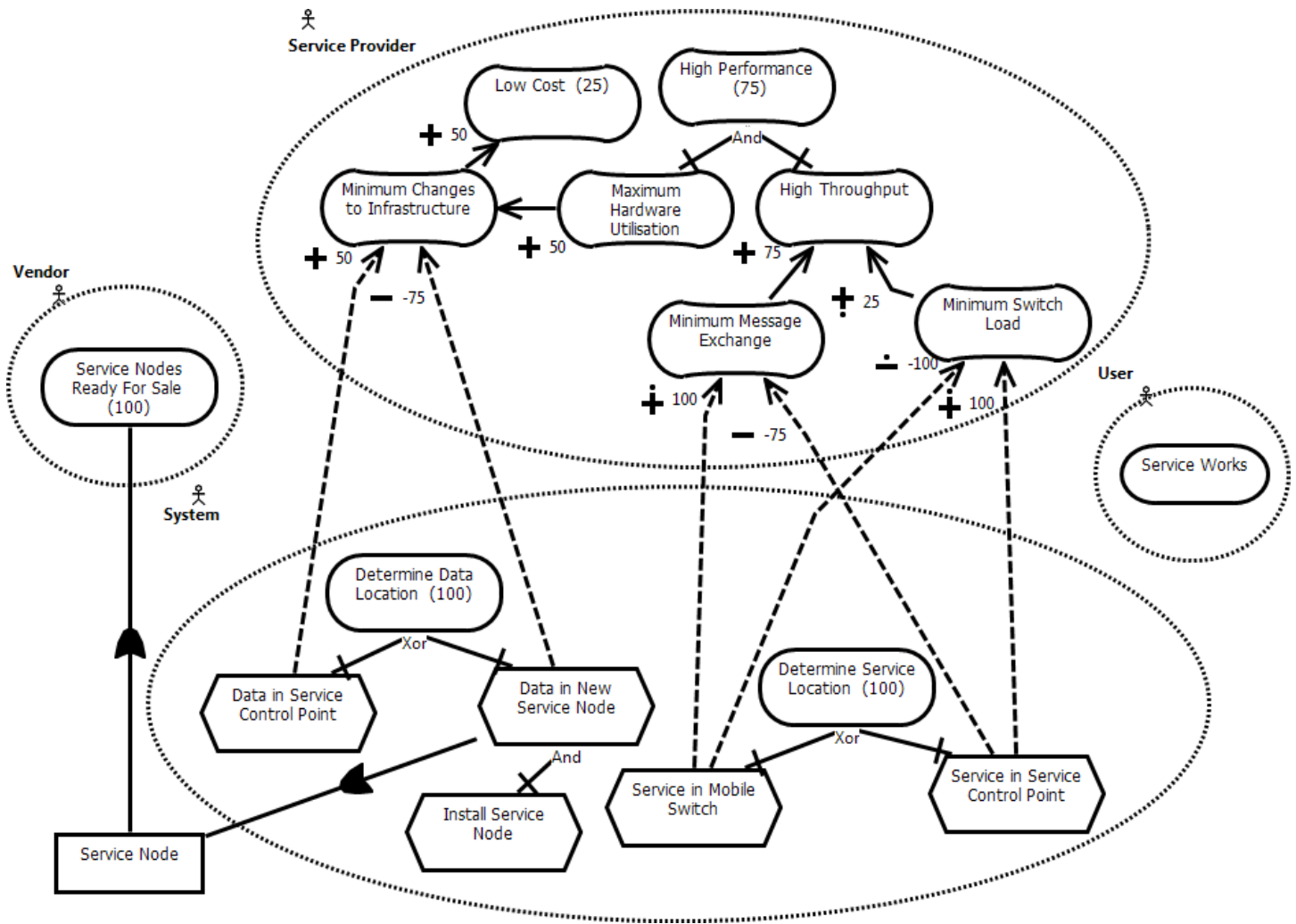


Figure 5 - GlobalView

**Intentional Elements**

High Performance: High performance of the system as seen by the service provider

## SvcAndDataInSCP

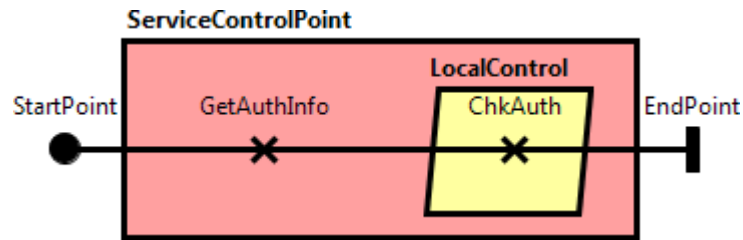


Figure 6 - SvcAndDataInSCP

## Responsibilities

GetAuthInfo: Gets the authorization information

ChkAuth: Checks (determines) the user location

## System

System

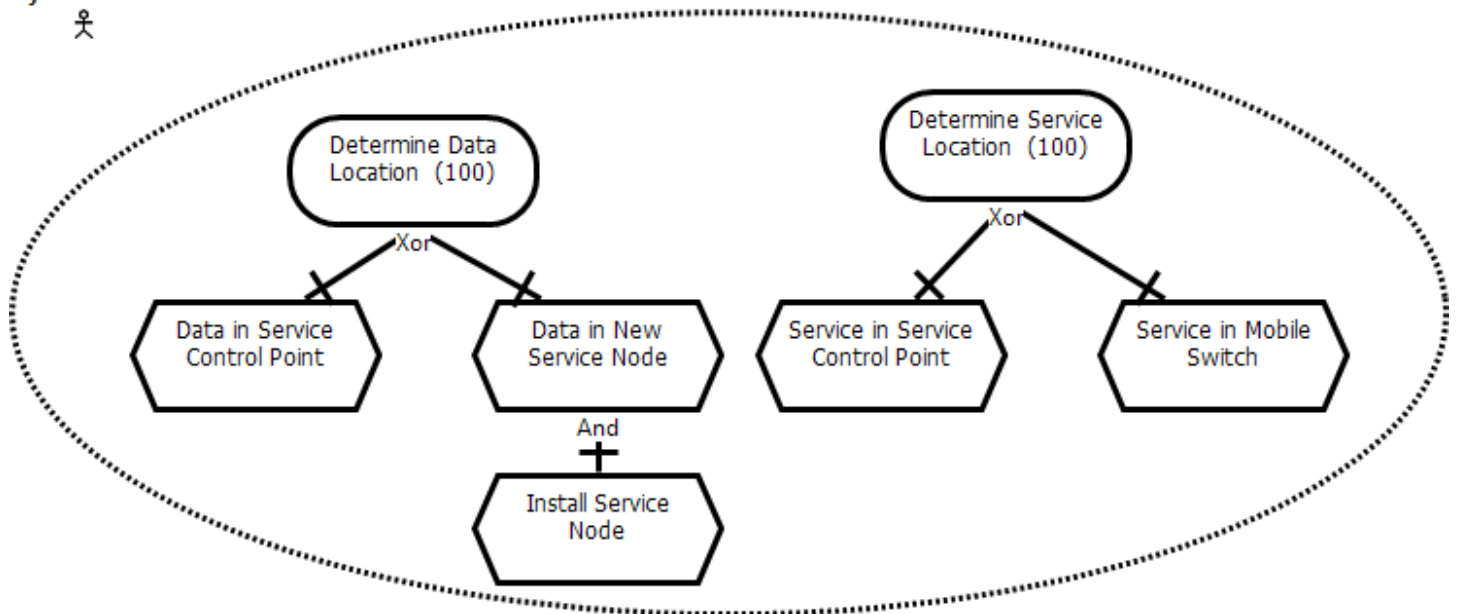


Figure 7 - System

## Scenario Documentation

### Scenario Execution Summary

#### Group UCMarchAlternatives (ID:5)

Scenario	Result	Message(s)
ConnectionAccepted (ID: 703)	FAILED	Type checker error occurred. Variable _grl_service_in_mobile_switch is not defined.
		Type checker error occurred. Variable _grl_service_in_service_control_point is not defined.
		Type checker error occurred. Variable _grl_service_in_mobile_switch is not defined.
		Unable to navigate to a plugin from Stub "Authorization (185)"
ConnectionRejected (ID: 704)	FAILED	Type checker error occurred. Variable _grl_service_in_mobile_switch is not defined.
		Type checker error occurred. Variable _grl_service_in_service_control_point is not defined.
		Type checker error occurred. Variable _grl_service_in_mobile_switch is not defined.
		Unable to navigate to a plugin from Stub "Authorization (185)"

## Scenario Information

### Group UCMarchAlternatives (ID: 5)

#### *Scenario ConnectionAccepted (ID: 703)*

##### Scenario Start Point(s):

StartConnection (ID: 100)

##### Initialization(s):

Variable Name	ID	Description	Type	Initial Value
authorized	299		boolean	true

#### *Scenario ConnectionRejected (ID: 704)*

##### Included UCM Scenario(s):

Scenario ConnectionAccepted (ID: 703)

##### Initialization(s):

Variable Name	ID	Description	Type	Initial Value
authorized	299		boolean	false