



**IBM Research - Zurich
GmbH**

Saeumerstrasse 4
8803 Rueschlikon
Switzerland

Author: Bernhard Jansen
email: bj@zurich.ibm.com
Date: 17.11.2011
Version: 1.0

Subject: Input to Architecture discussion for the 7th Framework project EcoGrid EU
Task 1.7 as discussed in teleconference on 11.11.2011 12:30 to 13:30
Sequence Diagram - RTM with automatic price reaction
Sequence Diagram - RTM with residential manual price reaction
Physical View - RTM with automatic price reaction
Physical View - RTM with residential manual price reaction
Correction to Use Case - Retail Real-Time Market with automatic price
reaction

1. Introduction

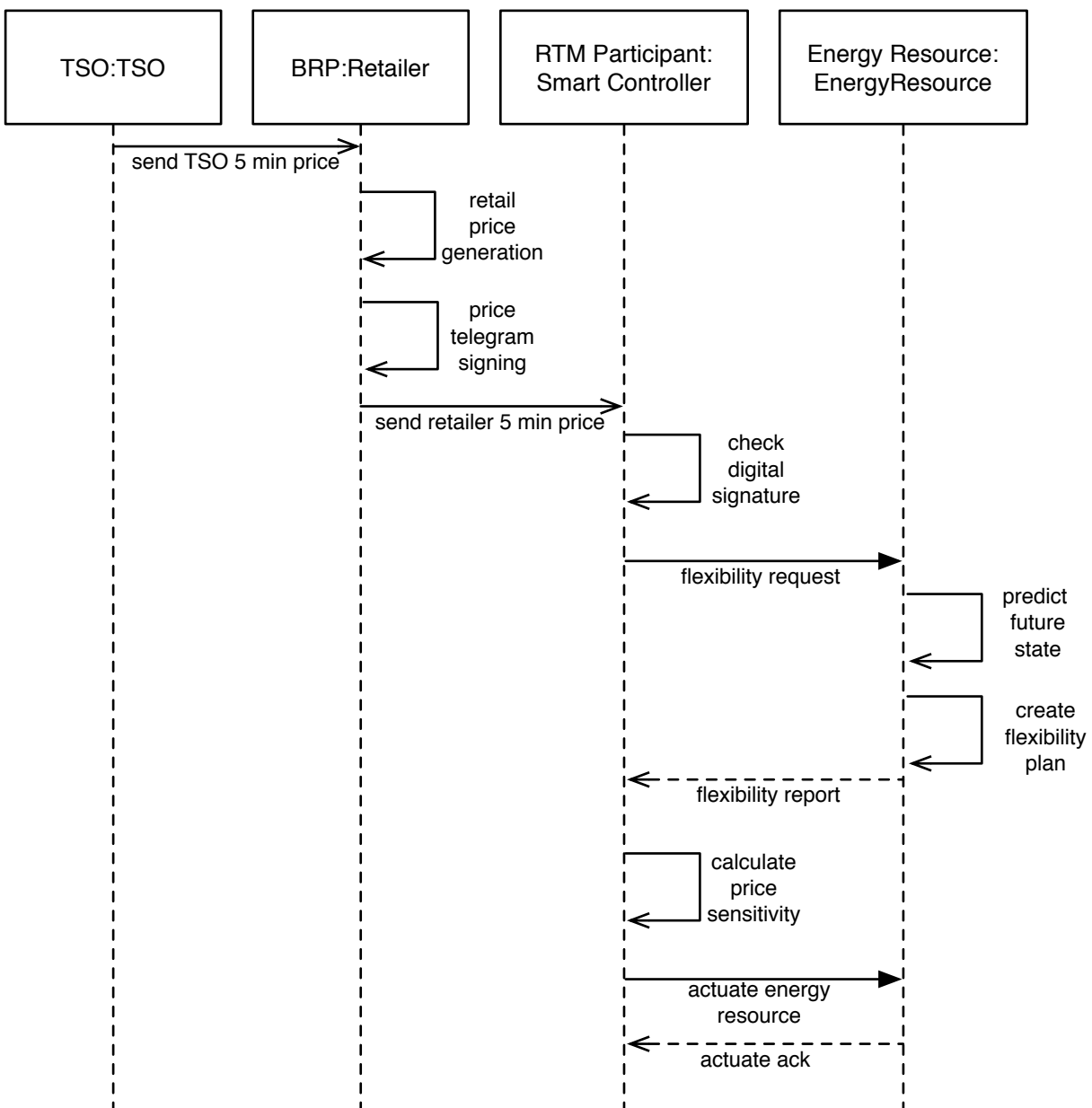
This document gives discussion input on the Architecture discussion for both of the IBM Use cases *RTM with automatic price reaction* and *RTM with residential manual price reaction*. The input is provided in form of sequence diagrams and physical view diagrams. It is targeted for Task 1.7 of WP1 of the 7th Framework Program EU project EcoGrid EU. Roles and formats are based on the draft of the deliverable D1.7.

2. Sequence Diagrams

2.1. Retail Real-Time Market with automatic price reaction

The sequence diagram described here show the application of the use case 3.4.3 *RTM with automatic price reaction* of the draft deliverable D1.7. The transmission of forecasts was on purpose omitted as there in no clear decision how often forecasts are transmitted and what a forecast contains.

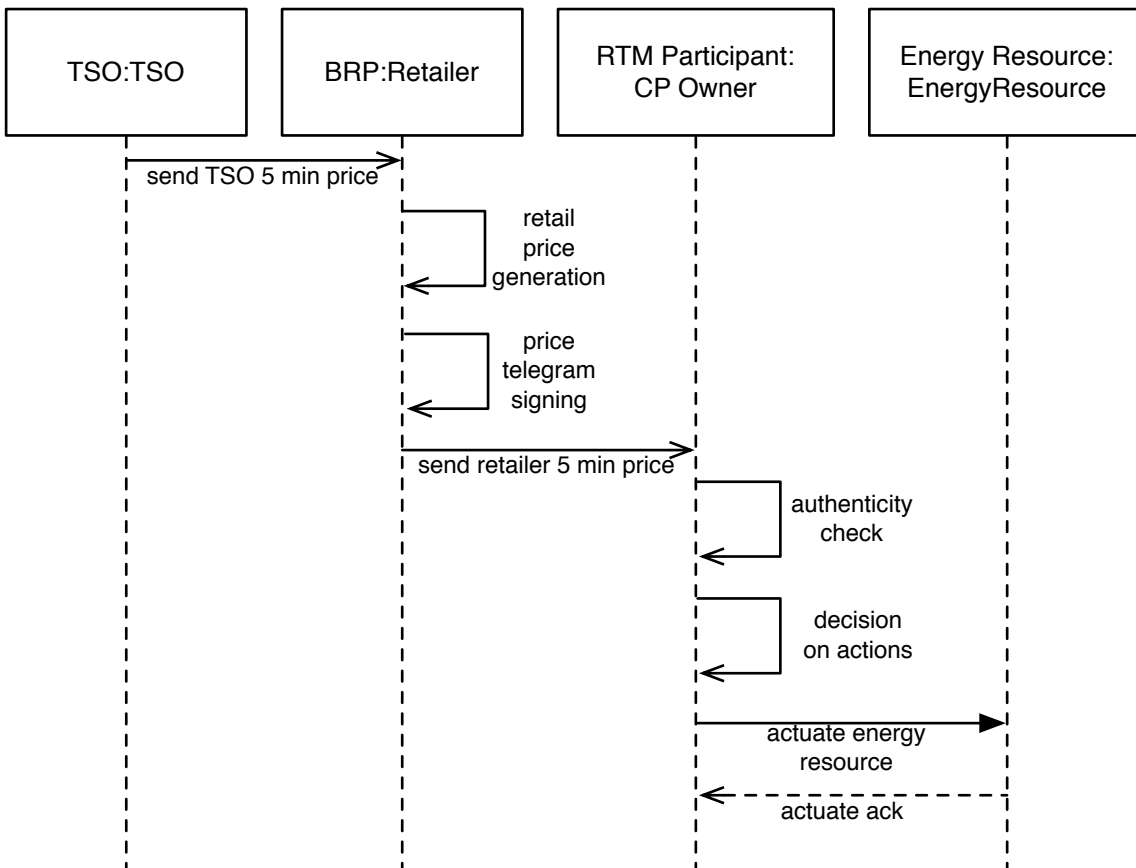
2.1.1. Sequence Diagram



2.2. Retail Real Time Market with residential manual price reaction

The sequence diagram described here show the application of the use case 3.4.4 *RTM with residential manual price reaction* of the draft deliverable D1.7. The transmission of forecasts was on purpose omitted as there in no clear decision how often forecasts are transmitted and what a forecast contains.

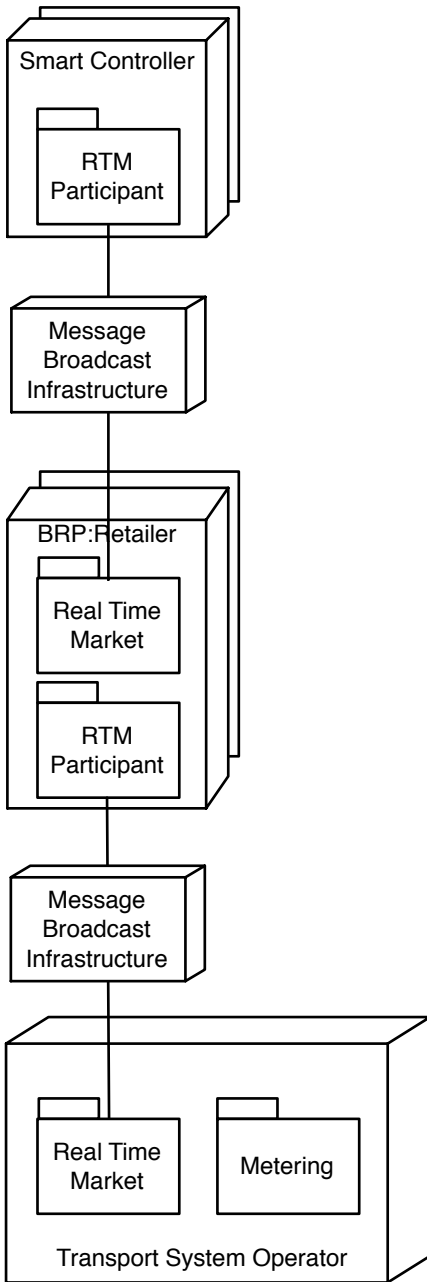
2.2.1. Sequence Diagram



3. Physical Views

3.1. Retail Real-Time Market with automatic price reaction

3.1.1. Physical View Diagram

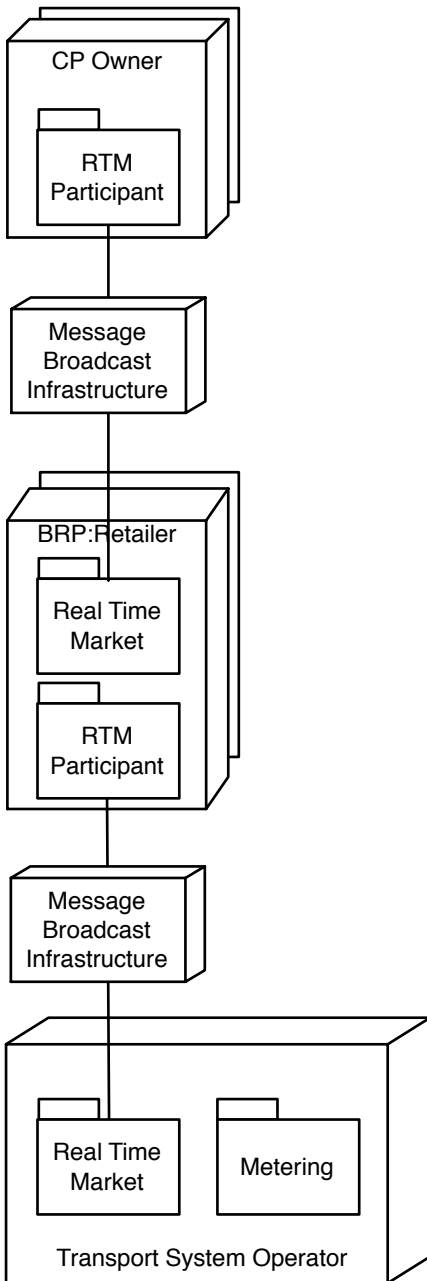


3.1.2. Design Decisions

Design Decision	Affects
<p>Message Broadcast Infrastructure - use a publish subscribe or broad/multicast protocol for scalability reasons (between BRP and Smart Controller) as for example IGMP, SIP, MQ, XMPP or equal</p>	<p>The Use Case affected here is 3.4.3 retail real time market with automatic price reaction and the quality requirement on efficiency</p>

3.2. Retail Real Time Market with residential manual price reaction

3.2.1. Physical View Diagram



3.2.2. Design Decisions

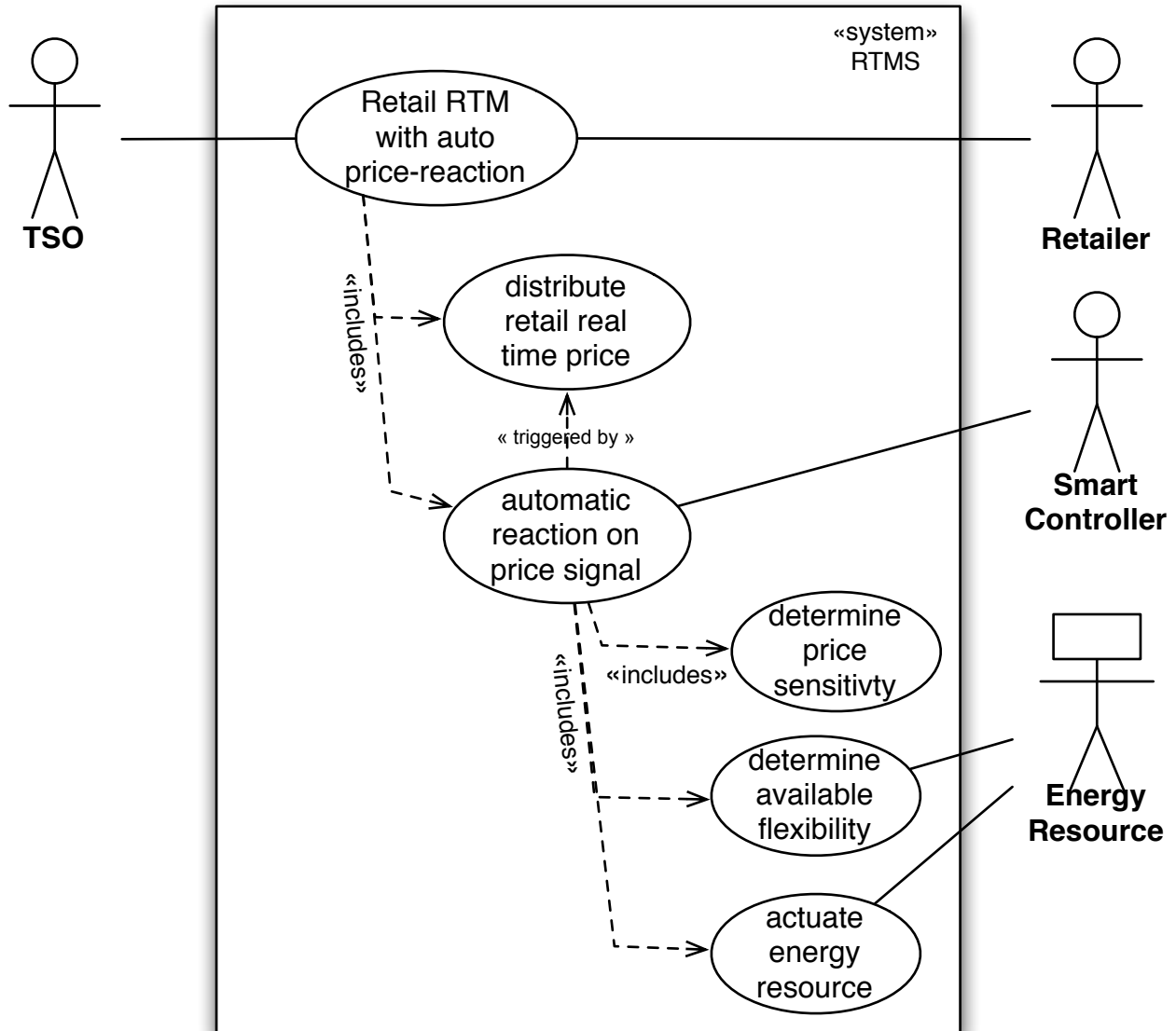
Design Decision	Affects
<p>Message Broadcast Infrastructure - use a publish subscribe or broad/multicast protocol for scalability reasons (between BRP and Smart Controller) as for example IGMP, SIP, MQ, XMPP or equal if the information will be displayed on a in home device. Or publish it with web technics on a website.</p>	<p>The Use Case affected here is 3.4.4 retail real time market with automatic price reaction and the quality requirement on efficiency</p>

4. Correction to Use Case - Retail Real-Time Market with automatic price reaction

4.1. Reason

The sub use case *determine price sensitivity* had a wrong actor and a typo.

4.2. Use Case Diagram



4.3. Textual Description

sub use case - determine price sensitivity	
Involved Actors	Smart Controller
Preconditions	determination of available flexibility completed, price sensitivity set for Energy Resource
Trigger	automatic reaction on price signal
Success Condition	a plan of price sensitivity for this Energy Resource
Quality Requirements	Efficiency / Time Behavior - control must be completed within 10 seconds Reliability / Maturity - system must run in stable state to support productive system
Scenario	1. read the available flexibility plan 2. read the price thresholds for the Energy Resource 3. create price flexibility plan

