A DataValue White Paper

DATA
VALUE

Bordeaux Str. 5
CH- 4053 Basel
+41 61 923 23 05
www.datavalue.ch
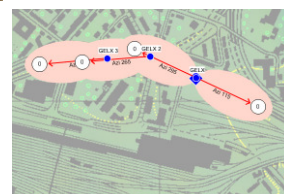
White Paper 'DV-MRD'
Managing GSM-R assets

Thomas Burmeister (DataValue)

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Introduction

GSM-R (GSM-Railway) has been conceptualized for covering railway-specific communication requirements. In addition GSM-R will provide a communication platform for future information services - initially for railway personnel and later for commuter information as well.

DataValue was tasked in 2000 by SBB AG (Schweizerischen Bundesbahnen) with the construction and technical operation of the system 'Mobile Rail Data (MRD)'.

The further development DV-MRD should serve as planning and information service. Relevant data for the construction and operation of GSM-R sites should be managed by the system.

DV-MRD is part of DataValue's ERTMS Toolbox

January 20, 2016

Problem Statement

In addition to the SBB AG different external companies are entrusted with the construction of the communication platform GSM-R in Switzerland.

The various participants in different roles require a common data platform for their assets and their information exchange.

The establishment of GSM-R sites must be accompanied from the planning stage until commissioning.

An uninterrupted documentation of the rollout must be ensured by document management and workflows.

Compliance with the NIS limits must be guaranteed.

Planning errors have to be identified in time. Differences between design and operation (target/actual comparisons) must be identified.

Different systems need to be served

A flexible reporting also to Geo information systems (GIS) must satisfy different interests.

Previous Options

Various self tailored tools are used by the different stake holder

Different syntax, models and terms are used to explain GSM-R objects.

No general overall planning for a rollout was managed by tools.

No document management and workflow system accompanied the process.

Praxis Solution

MRD is designed by SBB Telecom engineers for Telecom engineers and developed further in their various functions as DV-MRD.

Benefit 1/ Inventory site, tunnel

All assets (e.g.: BTS, antenna, mast, power systems etc.) used to build up GSM-R sites is stored in master data catalogs.

GSM-R sites to build means GSM-R objects to set up and to configure. Sites consists out of Masts, antenna systems, radio cells, radio services, BTS, Buildings with rooms and other facilities. Tunnel and Tunnel Radio can be managed similar to a site but with special tunnel radio components

Benefit 2/ Rollout

Sites are passing a flexible life-cycle from planning to operation. A time tracking shows delay on sites and lines.

Benefit 3/ DMS

A document management and work-flow system assures a fully docu-mentation at any phase/ milestone of the life cycle.

Benefit 4/ NIS

At some countries permission for construction of mobile radio facili-ties will be granted only in case a quality assurance system for the NIS (non ionizing radiation) management is established. The operating pro-vider is responsible for the observation of the limits and if exceeded for the alarm handling. The inte-grated NISV-QS is ISO certified.

Benefit 5/ Reporting

Various technical and management reports are integrated such as: general site report, site antenna report, radio mast report, RPH and Site survey report, BSS RNP parameter report, Powers systems report, NIS report, NIS error reports, rollout reports, management reports.

Benefit 6/ GIS

Localisation of infrastructure, layout and corresponding technical information on maps and relief maps

Analyses on network planning such as: handover between cells and intrasites, best server and coverage, target/actual comparisons

Benefit 7/ Interfaces

Data can be exported to csv, xls and xml.

Daily import of live data (xml) from netAct (Flexi-BTS) for a target/actual comparisons

Actual operational data from OMC and Radio-Commander can be viewed.

Export of NIS data to authorities (e.g BAKOM)

Archives for archived Sites-Versions Archive for old Imports

History of the key data is kept

Implementation

DV MRD can be implemented in the customer's network or rented as ASP.

Platform (SW-System)

Terminal-Server Architecture
(.Net Framework)
MS-SQL-Server
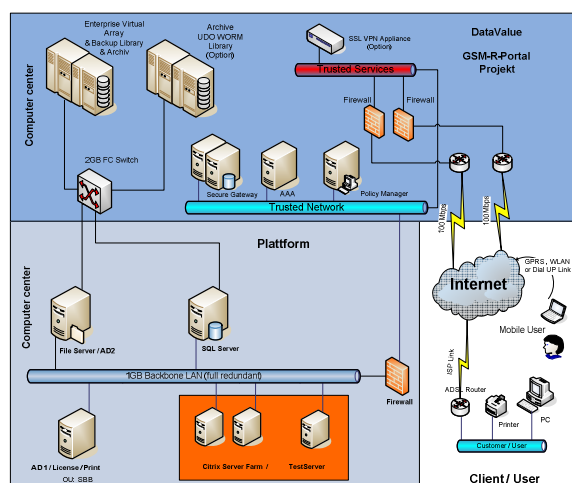MS – Office (Excel/ Access)
Windows-Client, WinServer, IIS
Google Earth GeoServer/ MapInfo
DMS ECM LiveLink

Platform (HW-System)

Load Balancing
Duplicate Computer-center

(Possible configuration)

Summary

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About DataValue

DataValue develops tailor-made, top-notch IT solutions
DataValue is ISO-Spice certificated.

Our Know-how

It is our aim to maintain a high technological standard in our links with other development institutions.
We especially want to perform developments in accordance with proven standards. We regard the development of structured and forward-looking customer solutions as fundamental.

Our Culture

We believe in direct inter-personal contact in a healthy atmosphere of discussion and debate, even in the Internet age. We consort with our customers in an honest, open and friendly fashion. We aim to consult independently and comprehensively, with long-term thinking helping us to establish new ties and to cultivate existing relationships.

Customer Value

We value close customer co-operation and the associated exchange of knowledge. Our developments should match customer requirements and should be implemented within schedule and agreed cost constraints.