RF Performance - ITSmobile runs AJAX
Overview and Description Paper of the Service Offering

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Overview of the ITSmobile Technology
Solution and ABAP Logic

ABAP Logic will be not effected therefore the backend performance will not be changed. The offering is applicable for all application where ABAP Dynpro is used and have to be accessed web-based using ITSmobile technology.

Major SAP solutions: SAP ERP-WM, SAP EWM, SAP Auto-ID

ITS (mobile) is part of the technology

The service offering will enhance the ITSmobile communication procedure and therefore will only improve the
Influencing Elements for RF performance
RF Gun ➔ Network ➔ ITS Mobile ➔ EWM ➔ ITS Mobile ➔ Network ➔ RF Gun

RF Gun ➔ Network ➔ ITS Mobile ➔ EWM ➔ ITS Mobile ➔ Network ➔ RF Gun

SAP System

Backend (Application Server & Database)

Web-Technology / Middleware Layer

Solution EWM / WM Incl. ABAP Layer

Responsible:
Device Manufacturer + Local Support + Device Support

Responsible:
Network – Customer Network/Basis Team

Responsible:
SAP BASIS TEAM + ITSmobile Development

Responsible:
SAP APPLICATION CUSTOMER DEV.
Influencing Elements

- System Architecture
  - Basis Set Up
  - CPU quantity
  - CPU frequency
  - Hana Database

- EWM Solution
  - Design chosen
  - Customizing
  - Post Processing Actions
  - ABAP standard
  - Developments
  - Validation Profile
  - RF Framework
  - RF Screen template

- ITS Mobile
  - Architecture
  - HTML Generator
  - MIME Object
  - AJAX Implementation

- Communication / Hardware
  - Wireless Network
  - Router/Switch
  - RF Device
  - Internet Browser

- Warehouse Physical Layout
  - Structure
  - Access Point location
## Responsibilities and Status

### SAP or Implementation Partner Responsibilities

<table>
<thead>
<tr>
<th>EWM Solution</th>
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<tbody>
<tr>
<td>Design Review</td>
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<tr>
<td>Customizing Optimizing</td>
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<tr>
<td>Post Processing Deactivation</td>
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<tr>
<td>ABAP standard Optimizing</td>
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<tr>
<td>Developments Optimizing</td>
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<tr>
<td>Validation Profile Optimizing</td>
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<tr>
<td>RF Framework Review</td>
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<tr>
<td>RF Screen template Optimizing</td>
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</table>

### Customer Responsibilities

<table>
<thead>
<tr>
<th>System Architecture</th>
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<tbody>
<tr>
<td>Basis Set Up Optimizing</td>
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<tr>
<td>CPU quantity increasing</td>
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<tr>
<td>CPU frequency Update</td>
</tr>
<tr>
<td>Hana Database Optimizing</td>
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</table>
# Responsibilities and Status Check List

<table>
<thead>
<tr>
<th>SAP or Implementation Partner Responsibilities</th>
<th>Customer Responsibilities</th>
</tr>
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<tbody>
<tr>
<td><strong>ITS Mobile</strong></td>
<td><strong>Communication / Hardware</strong></td>
</tr>
<tr>
<td>➢ Architecture Review</td>
<td>➢ Wireless Network Measure</td>
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<tr>
<td>➢ HTML Generator Check</td>
<td>➢ Router / Switch Optimizing</td>
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<tr>
<td>➢ MIME Object Check</td>
<td>➢ RF Device Optimizing</td>
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<tr>
<td>➢ AJAX Enhancement</td>
<td>➢ Internet Browser Optimizing</td>
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<tr>
<td>➢ Internet Browser Optimization</td>
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## Responsibilities and Status

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<tbody>
<tr>
<td>Warehouse Physical Layout</td>
<td></td>
</tr>
<tr>
<td>- Structure positioning</td>
<td>□</td>
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<tr>
<td>- Access Point Location Check</td>
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</tr>
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</table>
AJAX IMPROVEMENT

System landscape and Definition of the parts that will be improved
ITSmobile Architecture (NW > 700)

Improvement Areas:
1. Network – a minimal small amount of data is transferred between Client and Server [e.g. no MIME Files anymore – caching works 100%]
2. Rendering on the device improves the performance
3. Network stability – Ensure wireless network problems are covered
AJAX: Deliverables of Enhancement
Part of the Improvement/Solution

- With AJAX improvement the rendering will be improved, this rendering improvement ensure that performance gets on the device (rendering performance get improved)
- With AJAX the sending of Data to server gets controlled, means network issues can be controlled. With newest note: 1985219 E2E integration can be ensured.

**Performance Improvement**

**Improved Rendering:**
- only HTML Body is send to the device
- On the device only the HTML body is replaced means all HTML Header information doesn’t need to be renewed by the browser (DOM)
- Improvement in Memory usage

**Important remark:**
Improvement is especially visible on old devices with old operating systems
Interesting especially for customer with old device system landscape and many different devices due to historical reasons

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**Managing of Errors & Network Stability**

**Improved Error Handling:**
- Sending of data is controlled by JavaScirpt
- Once data is send and nothing is coming back from the system user gets and error message and can resend the data (feature what some industrial browser have)
- With Note: 1985219 it is possible to send data again
- Usage of industrial Browser or any other Network stability software is not important
Mobile Device Integration:

To run a mobile application the best-practice knowledge of all levels of the pyramid is necessary.
Details of the improvement

AJAX Rendering Part
Technical Background
Solution Details and Proposal

<html>
<head>
<script include />
<style include />
</head>
<body>
<screen content />
</body>
</html>

In the past (SAP Standard) the full HTML document would be transferred between Device and SAP System.

Only this data would be transferred between the Device and the SAP System.

Guaranteed performance improvement:
- 20-30% improvement
- Frontend rendering time below 1 second possible
Technical Details – of ITSmobile AJAX implementation

1. **Part:** All implementation done in the JS script (obfuscated) therefore, approx 90% from the ITSMobile standard logic can be took over. (also if customer used new ITSmobile graphical Editor)

2. **Part:** Adjustment of the HTML Main Templates to ensure that only Body is transferred to client.
Performance Comparison (customer experience)
ITSmobile Standard and ITSmobile runs AJAX

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<th>Date</th>
<th>Time</th>
<th>F-Code</th>
<th>Front-End</th>
<th>Backend</th>
<th>Full Time</th>
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APPENDIX

Improvement of ITSmobile Design

(only possible with rendering engine = good Browser)
= Windows CE5.0 / Windows CE6.0 / RohElements / Enterprise Browser
SAP NOVA Design Improvement:

If requested and additional change of the design on devices is possible – see above the SAP Consulting NOVA Design.
NEW Design & Functions

Add. Function:

1. Display SHIFT, FUNC, ALPHA, CTRL via DIVS/Images using JavaScript or EQUI Tags
2. Switch on/off Keyboard with a key on the device
Thank You!

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