Invented for life

BOSCH

Master Data Service (MDS)-1- General

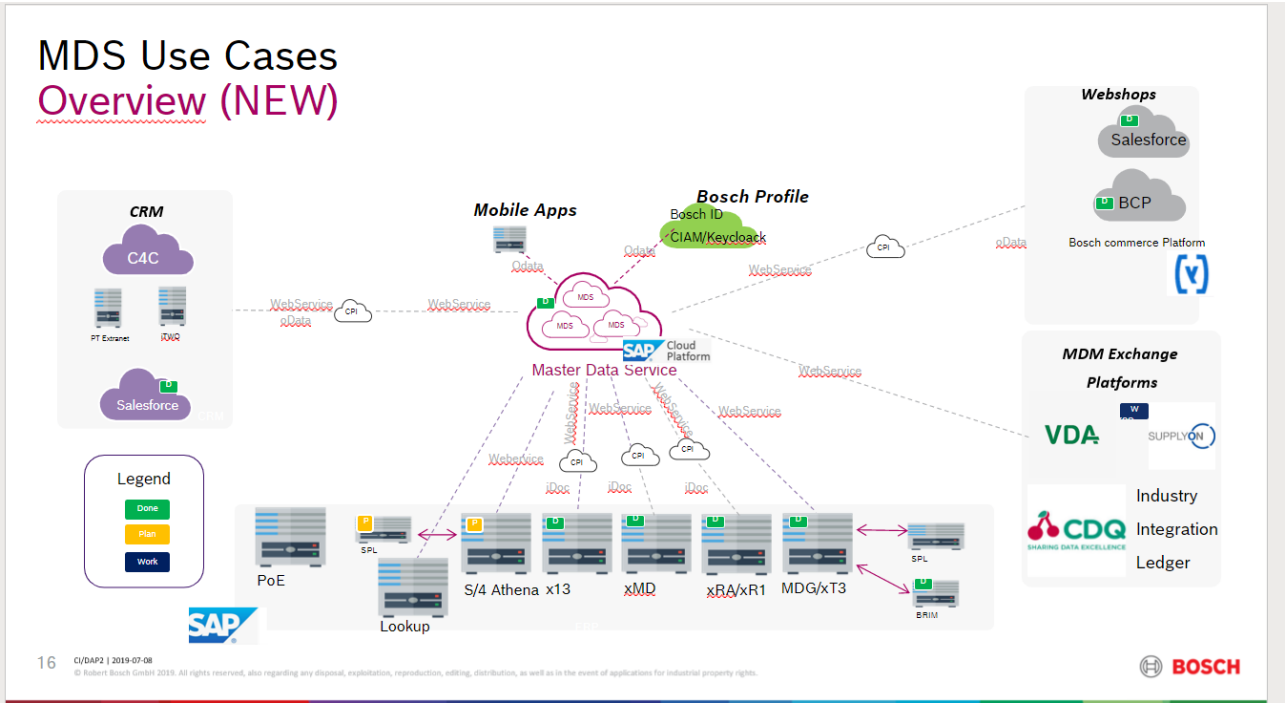
Docupedia Export

Author:Anonymous
Date:07-Aug-2023 11:02

Table of Contents

This page contains the following topics:

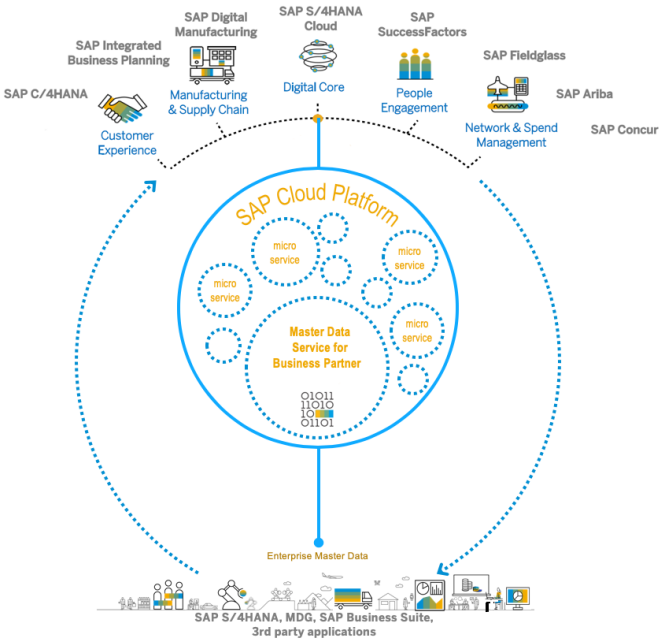
MDS Use Case Overview:



1 Master Data Service (MDS)- Introduction&Goals

1.1 What is MDS ?

- Master Data Service (**MDS**) is a **SAP Cloud Platform** application (SAP Cloud Platform Master Data Service for Business)
- MDS is a Software as a Service (**SaaS**) solution to connect cloud and on-premise applications for distribution of Business Partner master data
- MDS provides reusable master data services as a source of access to business partner master data and also addresses further integration-related requirements
- MDS provides easy to use and implement **Standard SAP API's** (REST, ODATA, Webservices) in your Business Application



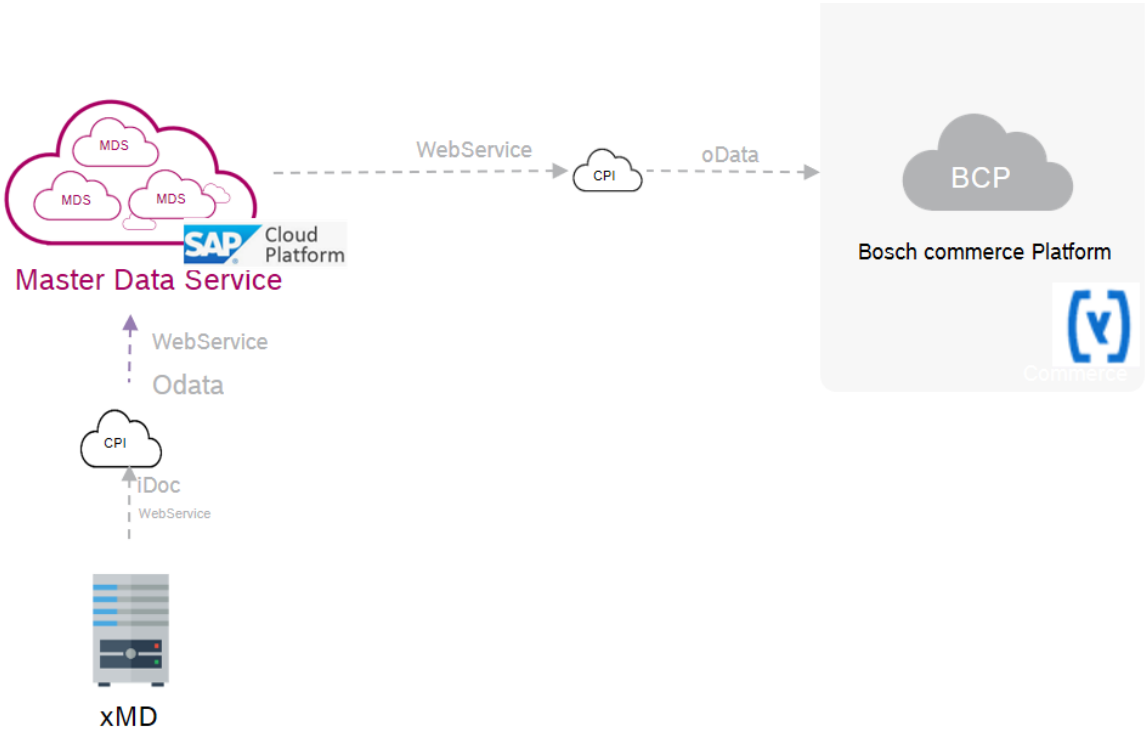
1.2 The purpose of BPMD-MDS service is to provide:

- Persistence of business partner Master Data records (persons; B2C Customers as well B2B organizations as Customers or Suppliers).
- OData REST API (OAuth2.0 protected), SOAP web service to manage the master data records
- Multi-Instance Cloud deployment
- Very high availability
- Bidirectional asynchronous replication of master data records with BPMD on-premise Backend system Master Data Governance (MDG) via a SOAP interface.
- Distribution of Master data records to target SAP- and Non-SAP systems (on-premise/Cloud) via the Master Data Orchestration Service.
- A Web User Interface running also on SAP Cloud, so called Fiori App. The UI is used for Service configuration and administration of data records. It is not meant for end users.
- Business logging an auditor logging interfaces.
- Integration with Bosch Id via SAML 2.0 to enable single sign on (SSO) with Bosch account.

2 Distribution from ERP to Cloud-based Webshops of B2B Customer Master Data

2.1 1.a PT and eBike Bosch Commerce Platform Integration

Business Need: Synchronize B2B Customer Master Data with eCommerce (BCP) dealer portals for PT and eBike.



2.2 1.b DC and Cloud system SF

Business Need: Synchronize B2B Customer Master Data with cloud system Sales Force for DC.

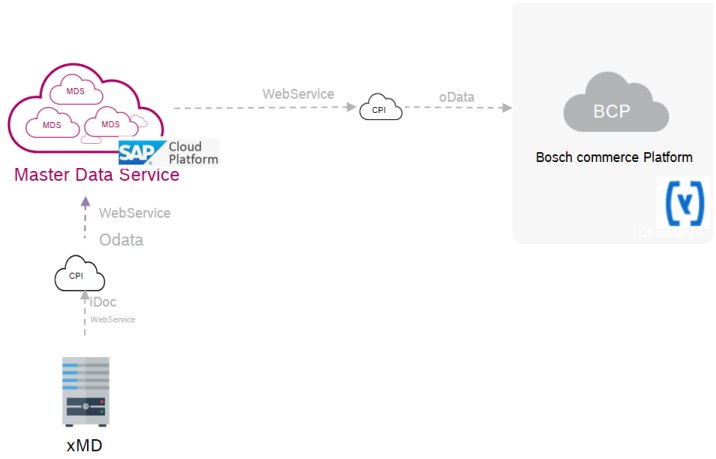
2.3 BCPaaS BEG Integration Bosch Commerce Platform Integration

2.3.1 Business need

Synchronize B2B Customer Master Data with eCommerce (BCPaaS BEG) dealer portal.

2.3.2 Requirements

The Integration is based on similar approach as for eBike:
PT and eBike BCP Integration with PMD



BEG requirements:

- Keep prepayment customers (with payment term prepayment) away from entering the BCP portal. Payment term B805 and D102 must be stopped from coming through MDS/CPI to the BEG Webshop.
- Only customer in sales area 6720 should be replicated during MDO→CPI→BEG

2.3.3 ERP - MDS

The Same ERP Interface is used as for eBike.
MDS Tenant is connected to SAP PMD system over a Bosch self developed SAP CPI iFlow. Customer are sent via IDOC from PMD to CPI and from there further to MDS tenant.
The flow: PMD-->CPI-->MDS-->CPI-->BEG

2.3.4 BCP SAP CPI adapter and Filter

The Integration of BCP Adapter is based on Commerce SAP CPI standard iflow for MDM BP service. The existing BCP adapter is used to connect an different BCP endpoint for BEG.
The Filter of payment terms B805 and D102 is implemented in CPI iflow through post exit call.
The filter will have the effect, that no customers, that have the payment terms B805 and D102 assigned will be allowed to leave CPI towards BCP for BEG.
Only once a customer is changed in PMD to another payment term other than one of both above, the filter in CPI would not block it anymore. So with the new distribution and it will go through to BCP as well.
The extensibility concept in CPI allows a modular usage of the adapter without breaking the standard update path, what means the existing iflow for eBike BCP will not be affected after implementation of BEG requirements in CPI.

2.3.5 MDO (Master Data Orchestration)

For BEG Use Case a new BCP destination and a new distribution model with specific selection filter (sales area = 6720) is set up in MDS.
Target BEG endpoint is set on the pre-exit call based on Receiver system name used when creating the MDS BCP destinations.

2.4 PT and eBike Bosch Commerce Platform Integration

The Integration is based on on Commerce SAP CPI standard iflow for MDM BP service

2.4.1 Modular Design of the MDS to BCP SAP CPI adapter

- The extensibility concept in CPI allows a modular use of the adapter without breaking the standard update path
- The modular design allows a reuse of same BCP adapter to connect multiple different BCP endpoints (no new redeployment)
- GB specific hooks (e.g PT hook) and common Bosch non-standard mapping (e.g payment term and sales area fields) can be implemented through post exit calls
- for each new use case (e.g eBike , PT Greece) a new BCP destination and a new distribution model with specific slection filter (e.g sales area) has to be set in MDS
- Target BCP endpoint can be set on the pre-exit call based on Receiver system name used when creating the MDS BCP destinations

2.4.2 Current CPI Adapter Design (Business Partner Organisation to B2Bunit Mapping)

draw.io
Diagram attachment access error: cannot display diagram

2.4.3 Current Integration features

The current standard releae 1.1 of the CPI Commerce adapter for MDM BP service has the following featues:

- Support for Bulk processing of multiple busniess partners
- Support of replication of B2B units and contact persons (B2B Customers)
- Support of multiple sales area in one Business partner record
- Support of replication of extra shipto / billto addresses (cross refferenced business partners)
- Support of the deletion of addresses through calling of a pre persistense Hook
- If a cross reference address is not found in the data store it will be fetched from MDS (cross reference should exist in MDS)

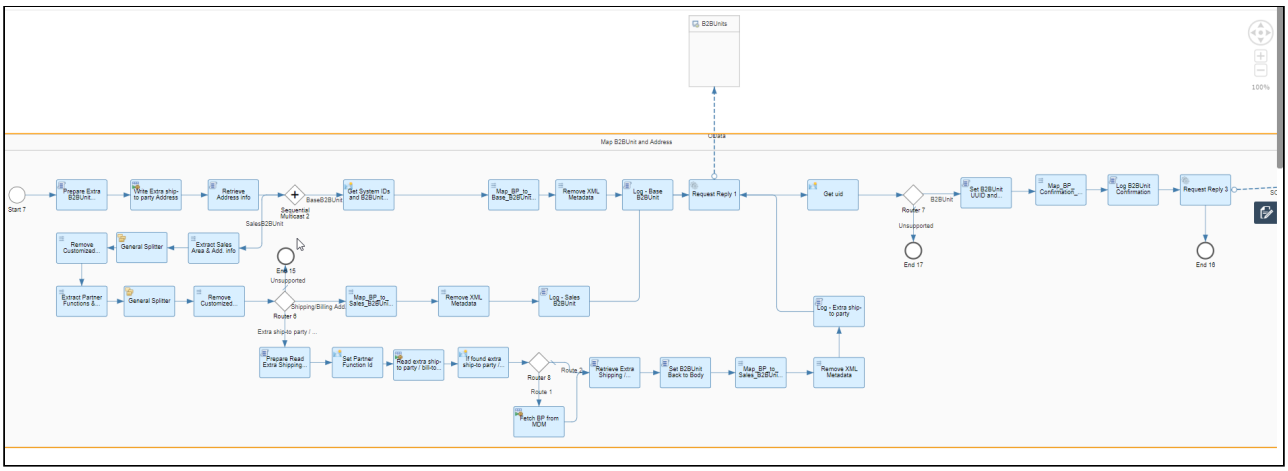
The following issues are already known:

- The update of an extra shipto / billto adress requires also the replication of soldto customer to reflect changes on Commerce
- Only successfull confirmation to MDS is now sent, but no confimration will be sent in fail case

2.4.4 Data Field Mapping: ERP-MDS-BCP

- BCP - CPI - MDS Customer model mapping

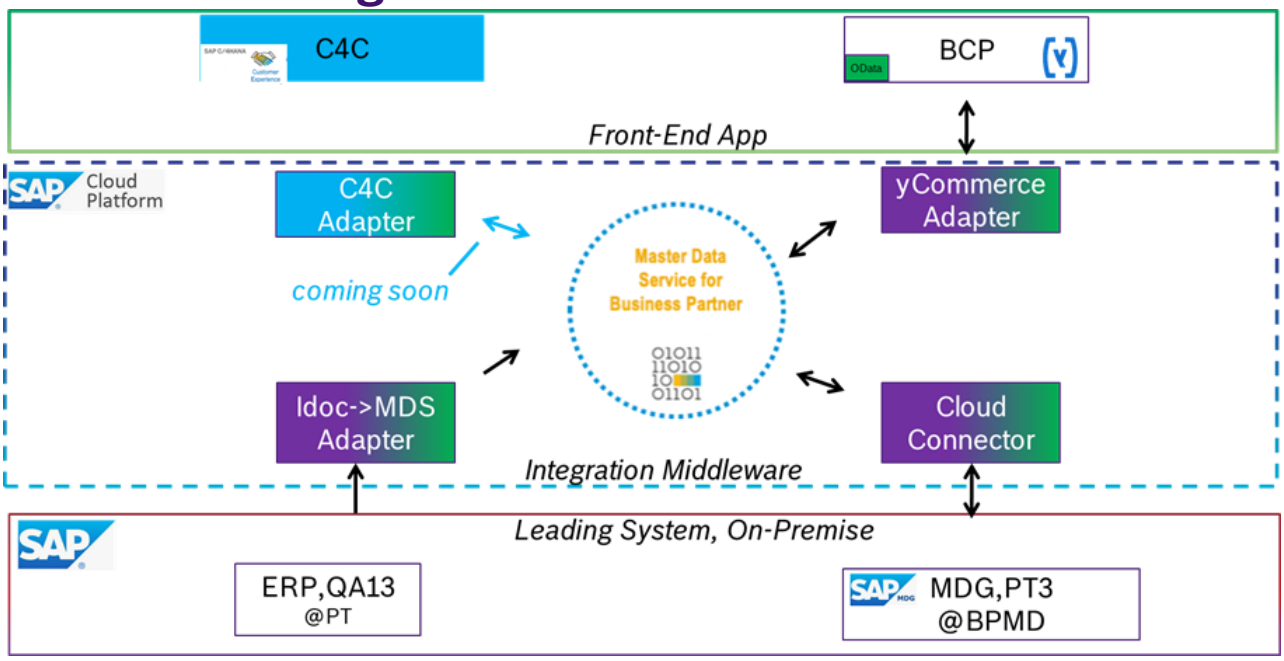
2.4.5 CPI MDS-BCP Iflow Implementation



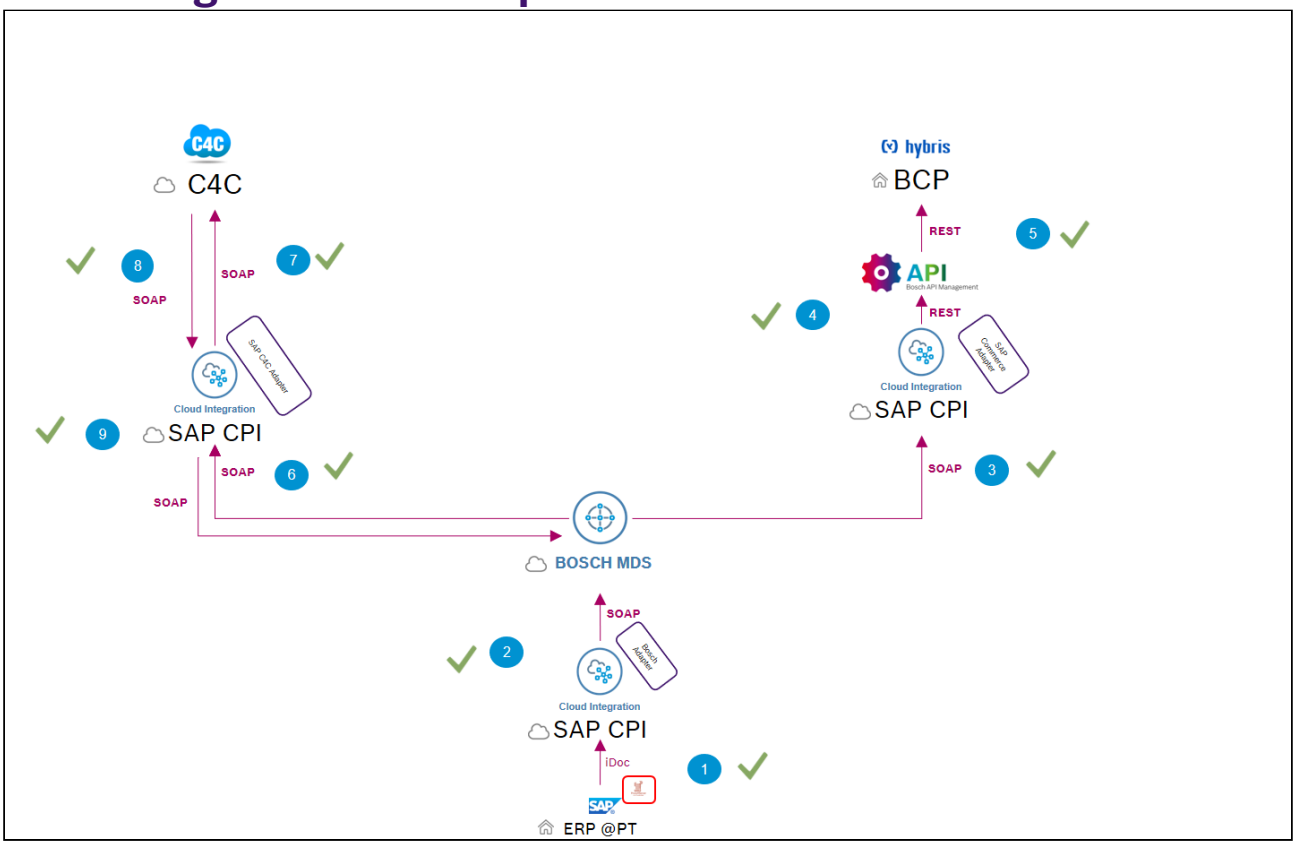
Upcoming Features:

- Support for multiple Customized BCP endpoints (different Odata edmx) e.g. b2bunit status → assure that use cases not-conflicting each others

2.5 PT C4C Integration



2.5.1 Integration Landscape

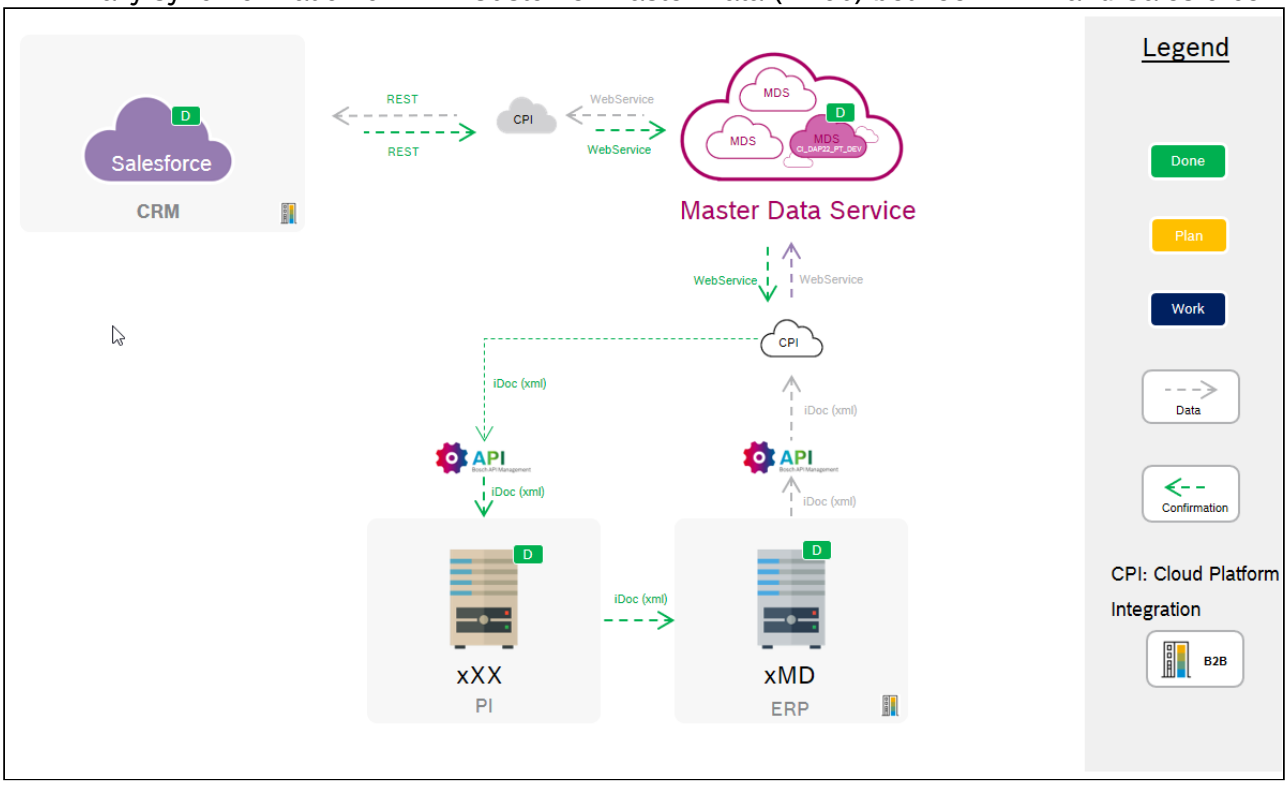


3 Distribution from ERP to Cloud-based CRM systems of B2B Customer Master Data

3.1 boost.Mobility

Business Need: Sales Forecast and Demand Management Planning for BBM.

- More than 65.000 RB90 customers successfully migrated from PMD to Salesforce CRM cloud.
- Daily synchronization of BBM Customer Master Data (RB90) between PMD and Salesforce.



3.2 BBM Boost.Mobility SalesForce Integration

3.2.1 BBM Boost.Mobility Integration of ERP (PMD) B2B Customer Master Data (GoLive since 30.11.2020):

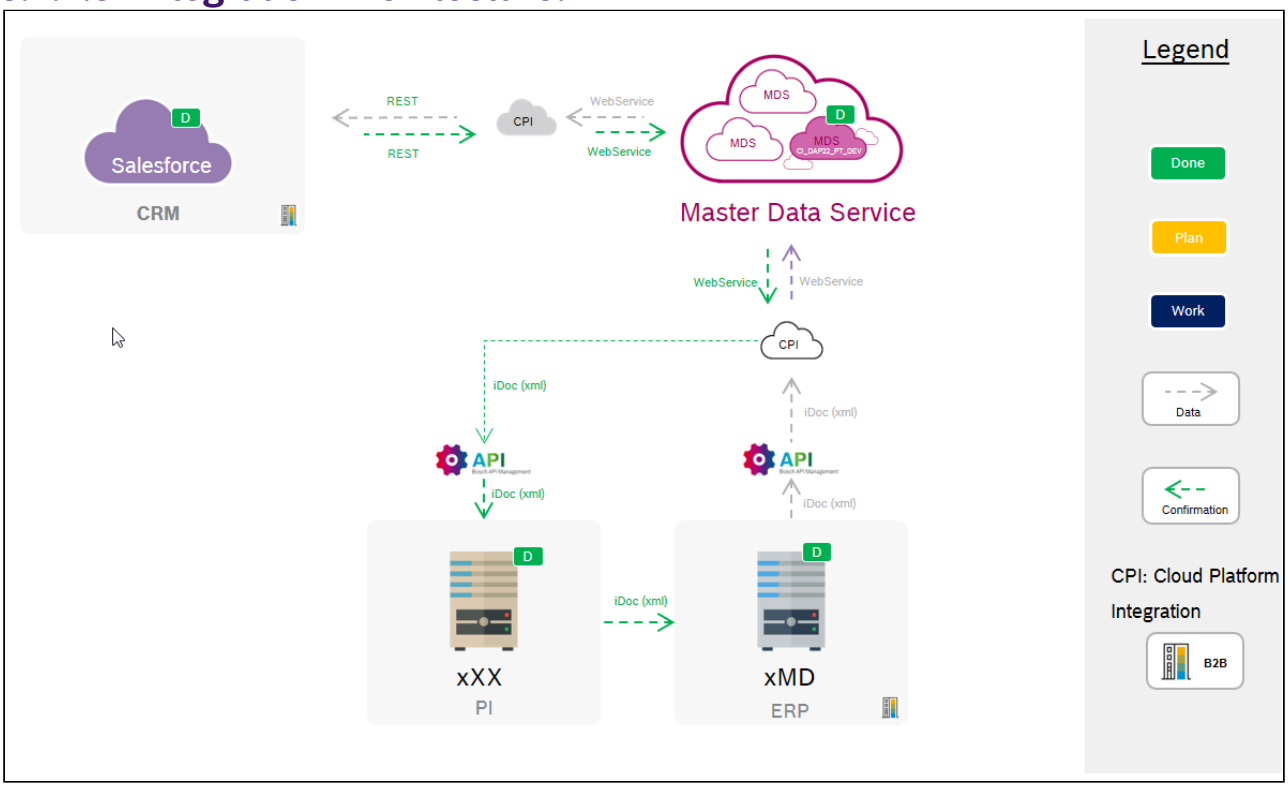
3.2.1.1 Description:

The focus of this integration is to replicate B2B customer master data from PMD ERP to the BBM SalesForce CRM Platform. MDS is used here as standalone (no connection to BPMD MDG backend) tenant on SAP Cloud to persist and destribute the master data to SalesForce BBM.
The mapping between ERP customer data sent via Idoc and the Buisiness partner data persisted in MDS is performed using SAP CPI (Cloud Platform Integration) Middleware. All the CPI API endpoints are consumed from ERP system through Bosch API Gateway.
For purpose of monitoring and better error analysis all records sent from ERP via IDOC are confirmed via a separate confirmation IDoc.
The integration with Salesforce is implemented using the Mulesoft Middleware . Business Partner Data is pushed to Mulesoft through the MDS Business Partner SOAP Webservice.

3.2.1.2 Solution Technical Details:

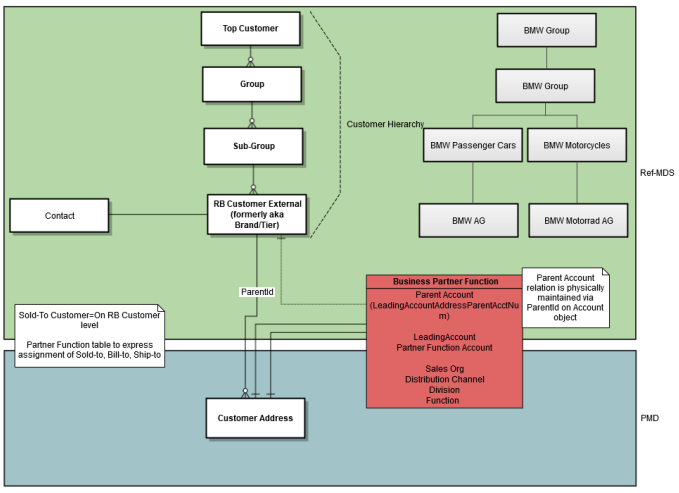
1. MDS to SalesForce Field Mapping
2. Salesforce Integration Interface (Staging Area)/old
3. SalesForce Customer Data Model/old

3.2.1.3 Integration Architecture:

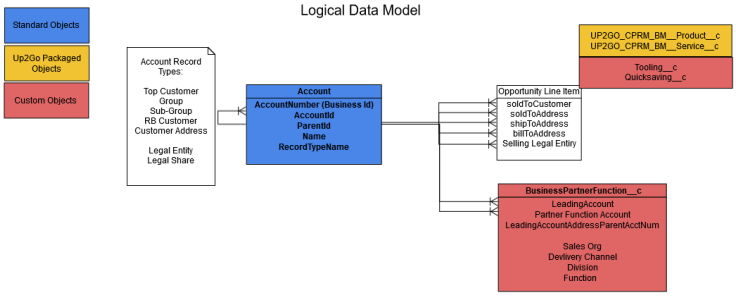


3.2.2 SalesForce Customer Data Model

Conceptual Architecture



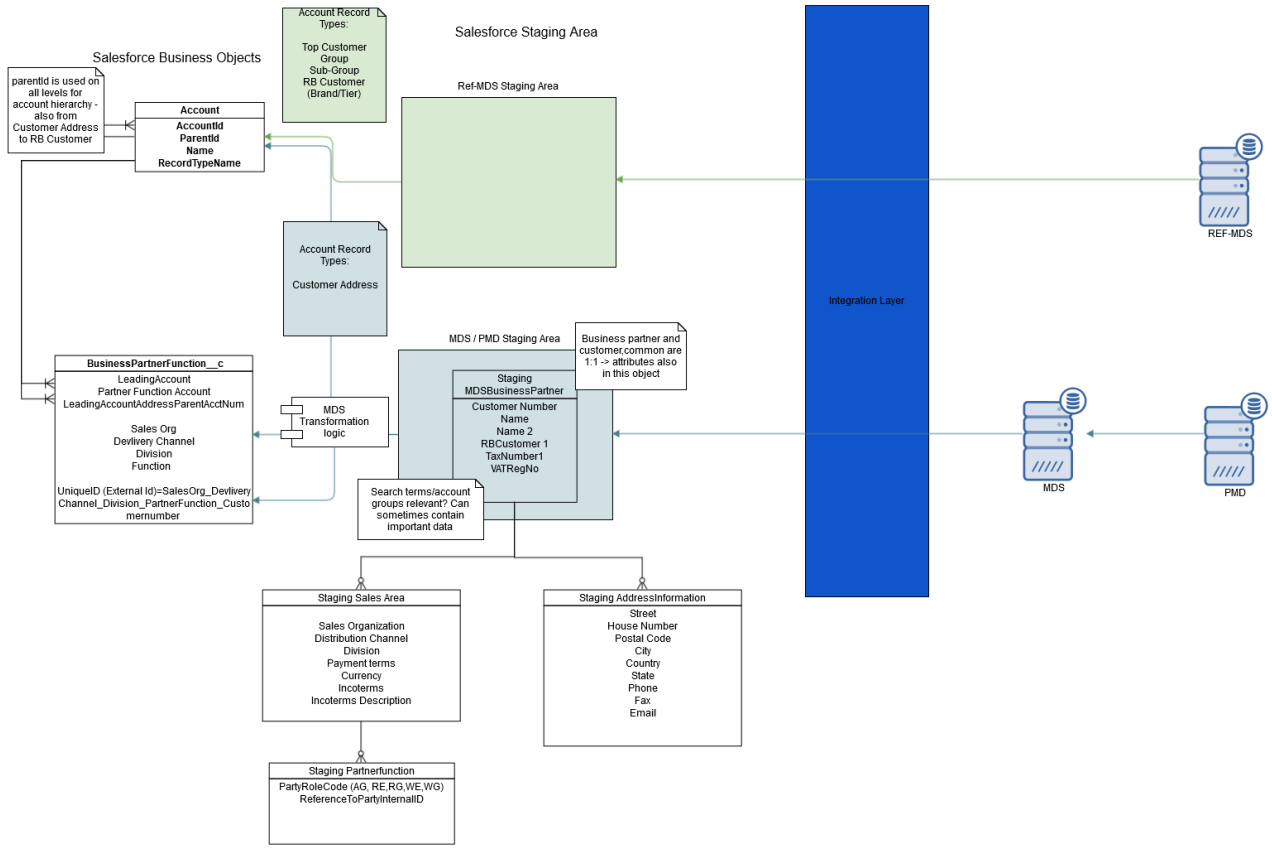
Logical Data Model



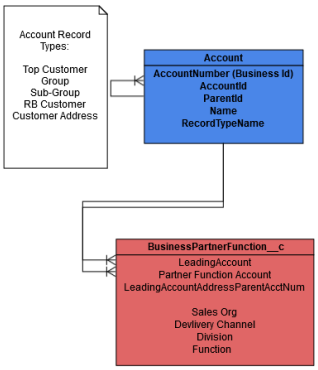
Source : BBM Bost.Mobility Customer Master Data Model

3.2.3 Salesforce Integration Interface (Staging Area)

Source: Bost.Mobility Docupedia



Field Mapping Staging to Business Object

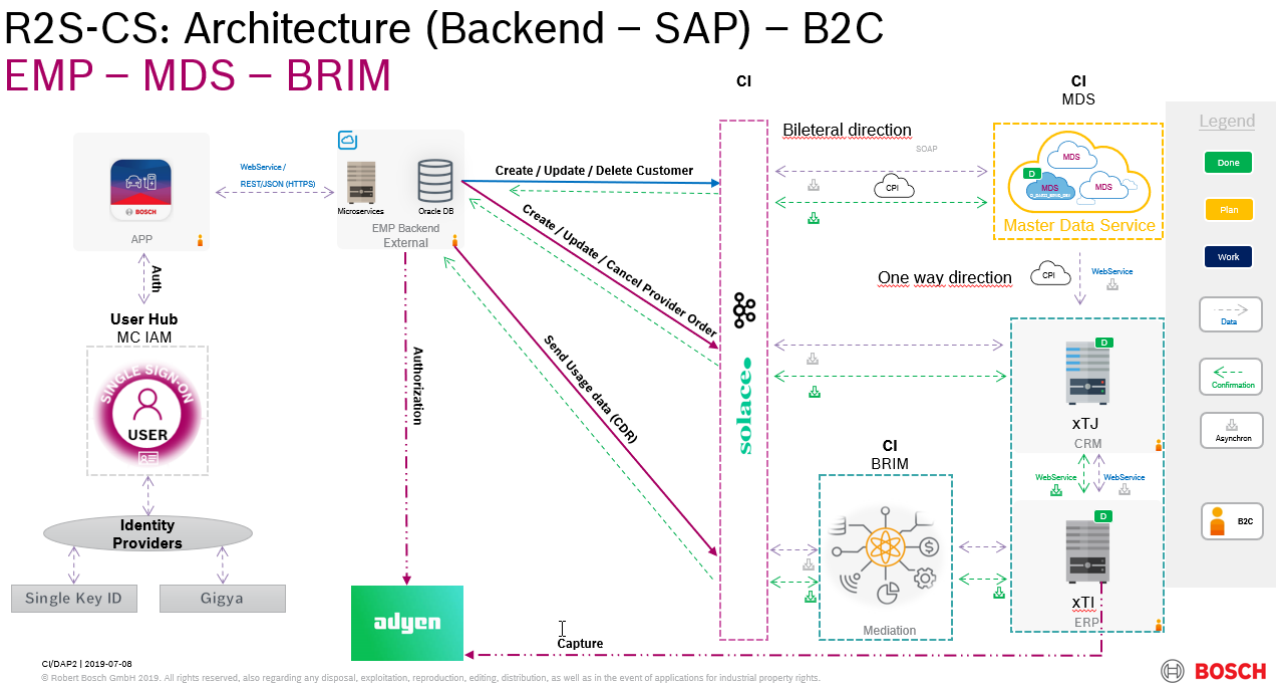


Source: Bost.Mobility Docupedia

4 B2B/B2C Customer Master Data Integration for Mobile Apps with Micro-Billing via BRIM

4.1 CS Convenient Charging App Integration with BRIM Billing:

Business Need: CS is offering a service for charging of batteries for electric vehicles.
High-Level process: After a customer has registered himself on the app with the respective address and payment data, the necessary customer master data is created in master data system PT3 and distributed to BRIM, where the relevant contract data will be created. The customer can then charge his car at the charging location. Once done, based on the electricity consumption, BRIM will then create the invoice and perform the billing of the customer.



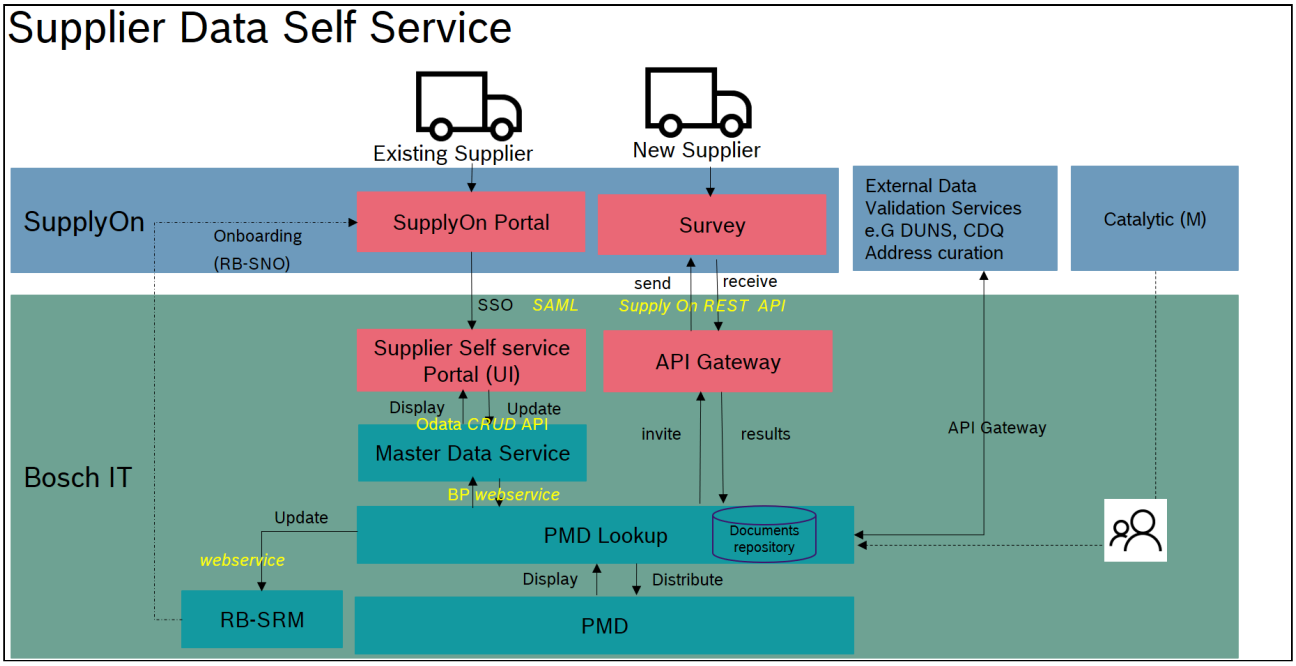
5 Integration of Master Data Exchange Platforms for Supplier and Customer Master Data

5.1 Business Partner Agent MDS Integration (IIL TOP 90)

See Bosch Tube Video Demo

Sorry, the widget is not supported in this export.
But you can reach it using the following URL:
https://tube.video.bosch.com/media/Business+Partner+Agent+-+MDS+Integration/0_v1m86cyp

5.2 SupplyOn Integration



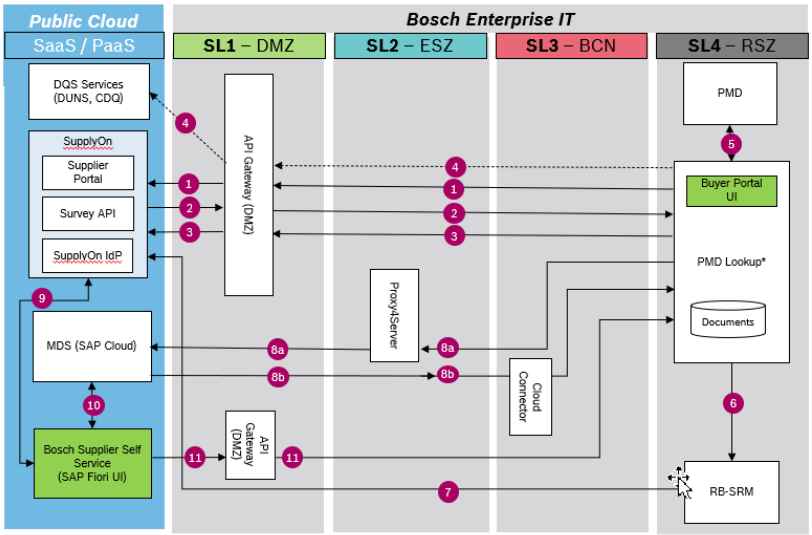
5.3 Supplier Master Data Self Services

Vendor should be able to give all necessary information directly via SupplyOn registration format (Survey) and via Supplier Self-Service Tool. Given information by vendor will be transferred to Bosch IT and internal workflow should be triggered automatically for data validation and approval.
This new solution should enable shorten time of registration process, data up-to-datedness, minimization of manual operations, and whole maintenance process must be trackable and end-to-end full transparent for all responsible (purchaser, operational teams, SupplyOn, vendor).

Further Information here

Supplier Self Service Architecture (UC1+UC2)

Integration Architecture: Bosch Enterprise IT / SaaS Application



1. Buyer Portal ←→ API Gateway ←→ SupplyOn: Send survey creation request to SupplyOn through Bosch API Gateway with contact data of Buyer and Supplier. Upon successful creation a Survey ID will be returned, Protocol: REST, NEW
2. SupplyOn → API Gateway → PMD Lookup: Push the survey status to PMD Lookup (update master data, status and document keys in Buyer Portal, Protocol: REST, NEW
3. PMD Lookup → API Gateway → SupplyOn : gather the supplier documents (surveyID and fileID as Key, one API call per document) data from SupplyOn and store in PMD Lookup, Protocol REST, NEW
4. PMD Lookup ←→ API Gateway ←→ CDQ/DUNS : validate bank data and gather DUNS information from CDQ and DUNS services, Protocol: REST
5. PMD Lookup ←→ PMD: Synchronize master data with PMD, Protocol: FTP
6. PMD Lookup → RB-SRM: send master data to RB-SRM, Protocol: SOAP
7. RBSRM → SupplyOn: send RBSNO to SupplyOn, Protocol: SOAP
8. PMD Lookup ←→ MDS: 8a: Synchronize supplier master data with MDS, also used for initial migration, 8b: send updates to PMD Lookup, Protocol SOAP, NEW
9. Bosch Supplier Self Service ←→ SupplyOn: Login to Supplier Self Service using SupplyOn SSO (SAML IDP), Protocol: SAML , NEW
10. Bosch Supplier Self Service ←→ MDS: Supplier can show and maintain its master data by sending Read and Update requests to MDS, Protocol: Odata, NEW
11. Bosch Supplier Self Service → PMD Lookup: Supplier can upload documents and synchronize them with PMD Lookup, Protocol REST, NEW
APIs through all SLs for 11

Legend:
= Required for standard community platform (Bosch-wide solution)
= Optional integration candidates, dependent on specific use case
New Component | External Component | Existing Component

Notes:
1. Architecture based on intersection of requirements of CI/PDM1 and GS/PSC
2. *deployment server belongs to SL3

updated on 4th Aug 2021

BOSCH

6 Harmonized Scenario (MDG)

6.1 S&ST Marketplace Integration wih xT3 (AZENA)

6.1.1 Description (Business Context)

Security & Safety Things (S&ST) is a Bosch IoT start-up, which provides an application store to turn security cameras into smart IoT devices.
It connects the ecosystem of

- camera manufacturers,
- developers,
- integrators and
- customers

by providing an **open IoT platform for security cameras**.
The S&ST platform consists of 4 components:

1. ***Camera OS***
   S&ST created an operating system to serve as the industry standard for security cameras. Based on the Android Open Source Project (AOSP), it gives developers libraries, an API framework, and codecs to work with. Camera manufacturers can use it free of charge.
2. ***Developer empowerment***
   The S&ST development environment provides designers and developers all the information and tools they need to develop and test apps. Analytics for app performance and business KPIs are available to help improve the product.
3. ***Application store***
   Integrators and users can download ready-to-use AI-based apps for IP cameras. As a global platform, the app store lets developers and solution providers monetize their solutions. It is a marketplace set to release a wave of innovation.
4. ***Device management***
   Use our powerful device management portal and tool for offline cameras to combine state-of-the-art hardware with cutting-edge software. Manage devices and clients easily to create outstanding user experiences.

Camera manufacturers can run their IP-cameras using the free-of-charge camera OS provide by S&ST.
Customers can then equip their smart cameras with video-analysis-apps from the S&ST app store.
With these apps, security cameras can be used for various purposes, for example some apps can detect if shoppers wear face masks when entering a retail store or even analyzed the most frequented paths that customers walked through the store..
Customers are registered either as

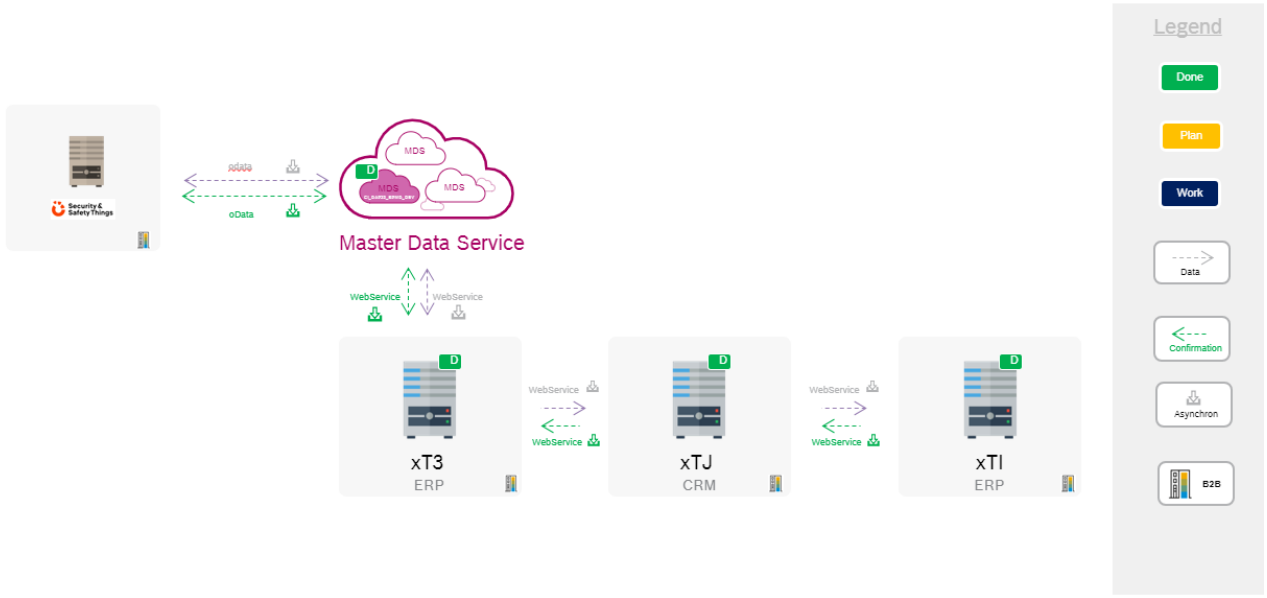
- Seller / Integrator or
- Developer

Using SAP Master Data Service (MDS) as data distribution hub, these customers are being transferred to the SAP master data system xT3 where they are automatically created and released by shared service after all relevant checks have been performed.
Customers are created with the 3 partner functions ship-to, bill-to, payer.
As this is an online use case with no physical delivery involved, there is no ship-to being used.
It is possible to maintain separate bill-to addresses for a customer.
Once the change requests (CRs) have been approved in xT3, the customers with their respective customer numbers are sent back to the S&ST frontend, where the final customer number is being approved.
During automatic creation on xT3 also an sanctioned party list check (SPL) to Bosch Partner Screening (BPS) system is being performed. If this SPL check creates a positive result (hit), the customer will remain in status "pending approval" until the customer has been released in BPS. The "pending approval" status is also being transferred to the S&ST frontend.

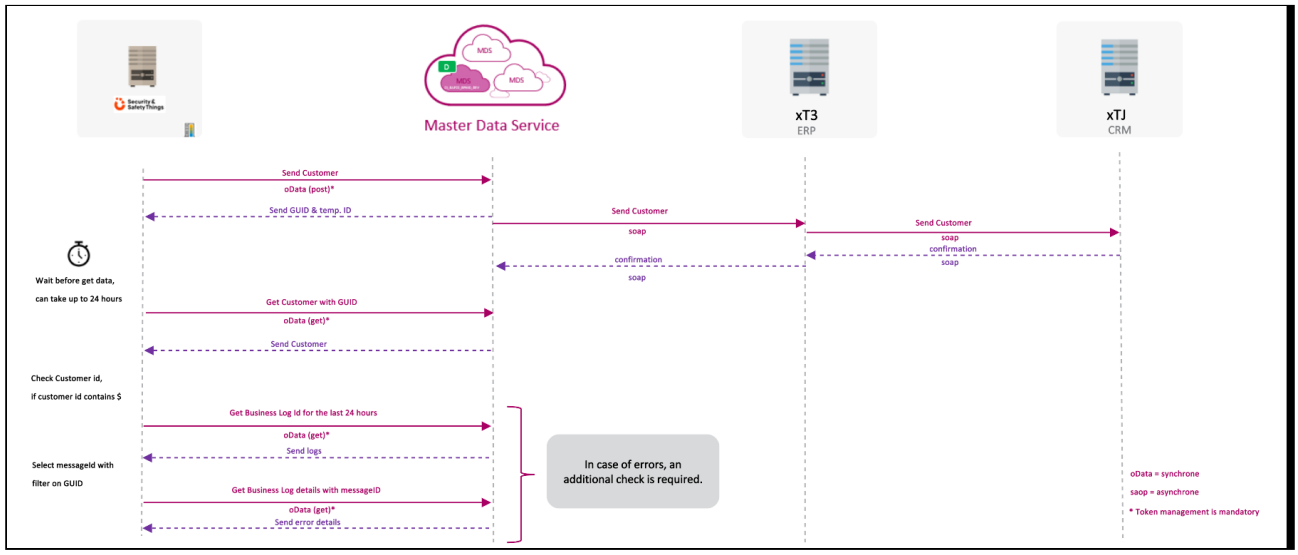
6.1.2 Data Mapping

- **Data field Mapping S&ST to MDS**

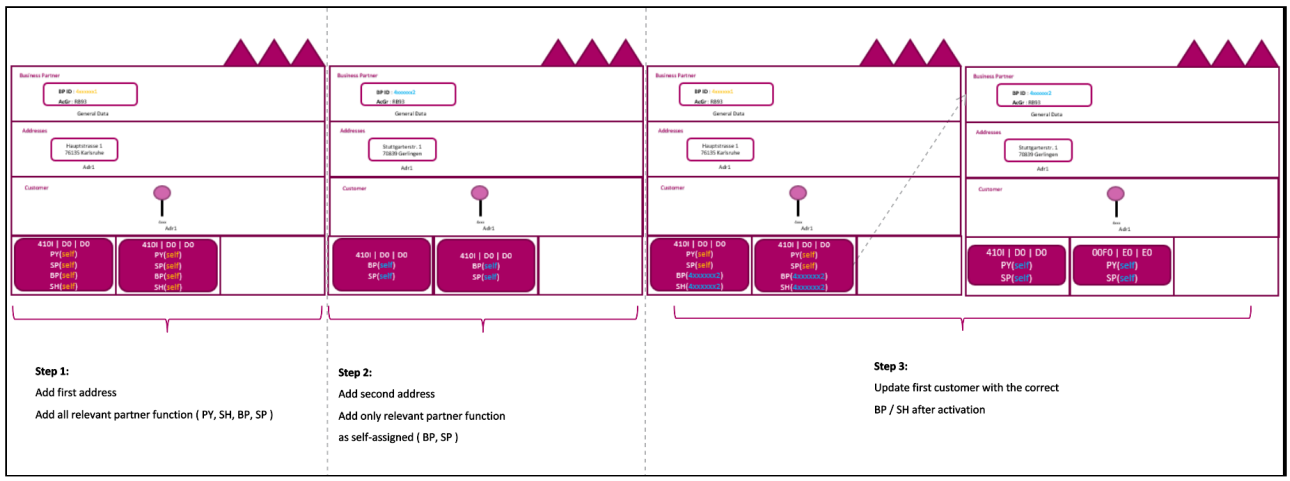
6.1.3 Architecture



6.1.4 Customer Creation Process



6.1.5 Customer Update Process (add second address)



7 Master Data Service (MDS)-Useful links

Page Name	Link	Page Name	Link
Product Roadmap	Master Data Service (MDS)- Product Roadmap	Docupedia	
SharePoint	https://bosch.sharepoint.com/sites/msteams_ffc4ff/Shared%20Documents/Forms/AllItems.aspx	Knowledge Management System (KMS)	
LeanIX	https://bosch.leanix.net/boschpflive/factsheet/Application/72f82f6a-11da-443b-8a47-3c926a847735/documents	Vendor home page	
Track&Release	https://rb-tracker.bosch.com/tracker03/secure/RapidBoard.jspa?rapidView=5292&projectKey=BPMDMNEW&quickFilter=45405&quickFilter=45406	SMT Configuration Item / **CMDB**	
Community			