

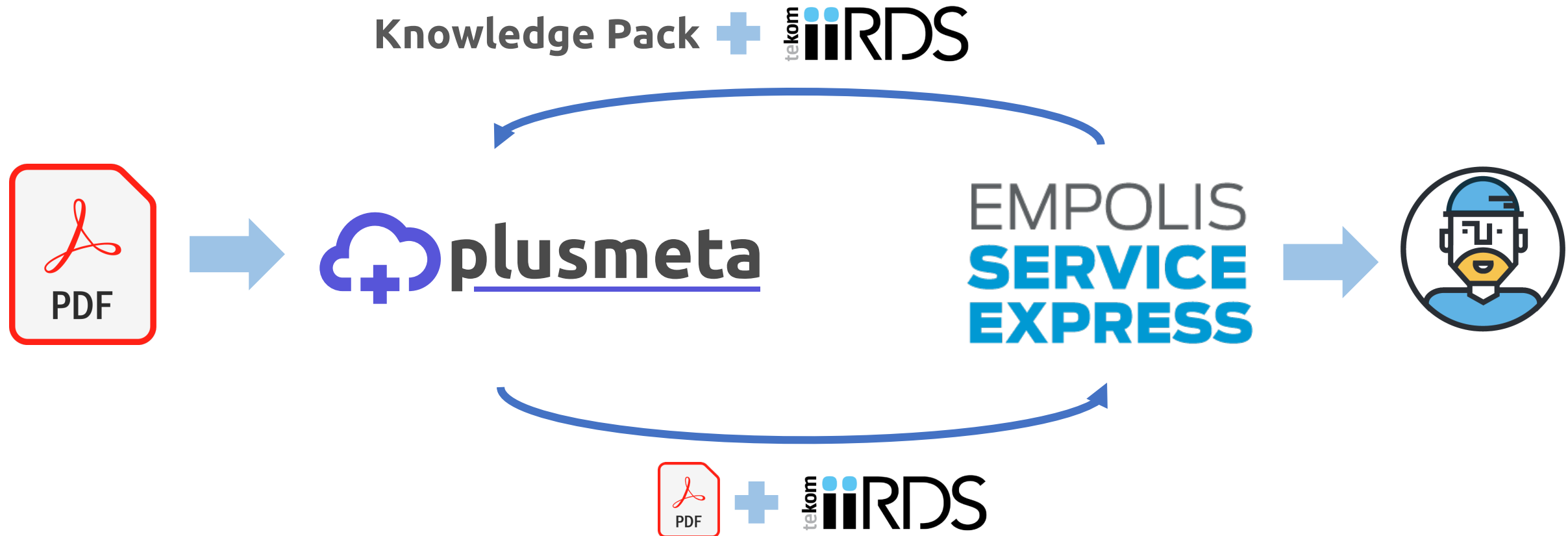
Best Practice Example



SmartFactory Industry 4.0: Integrating supplier documentation

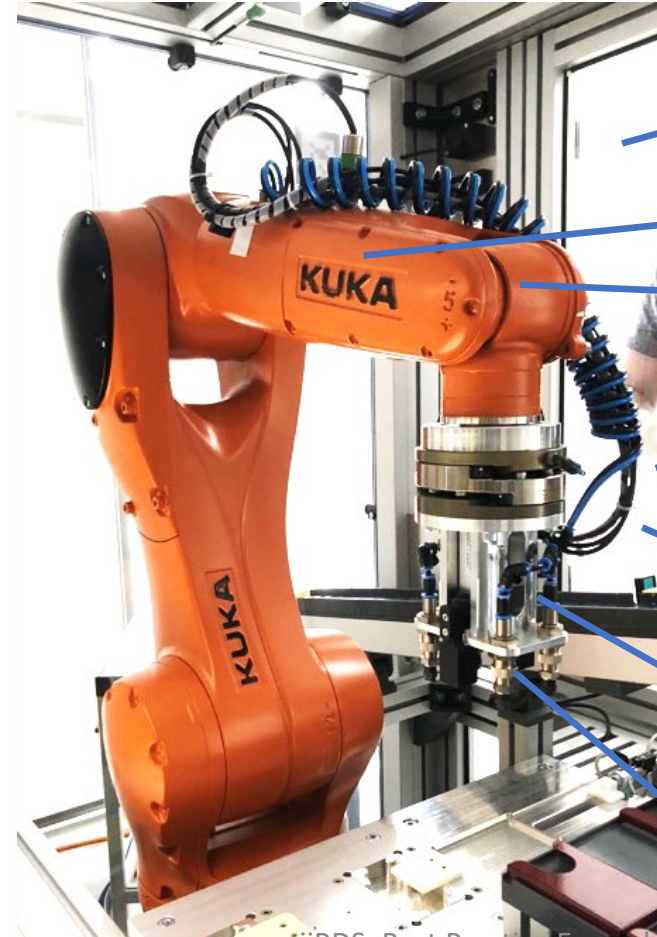
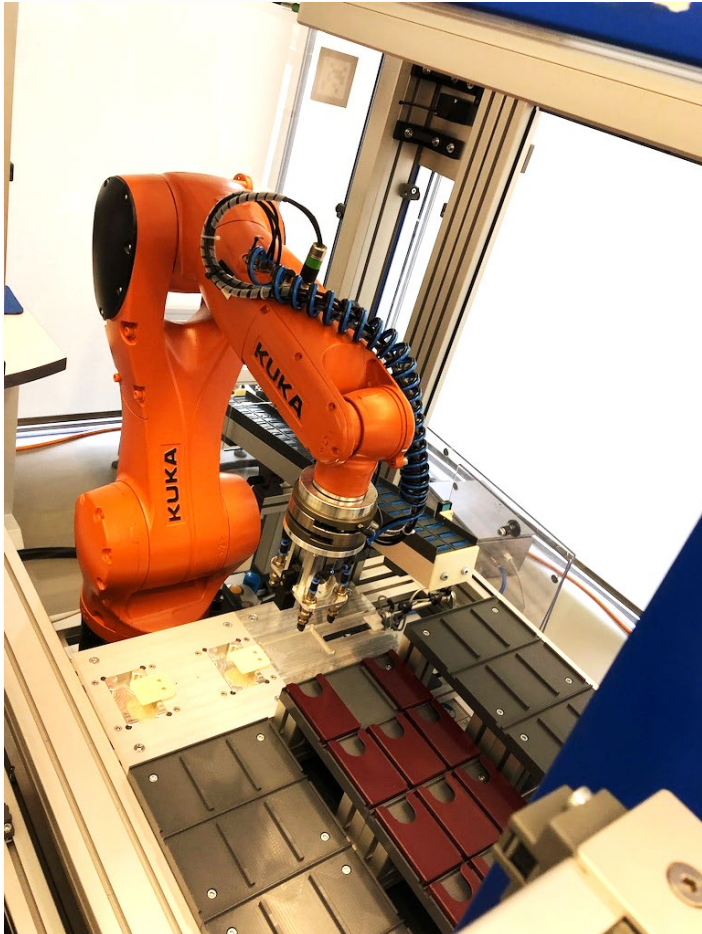
Process: Add supplier documentation to a content delivery portal with service information

- Problem:
 - Legacy PDF documents are excluded from modern metadata-driven information processes
- Solution:
 - Automatically enrich legacy PDFs with iiRDS metadata and make them available for users such as operators and field service engineers
 - Use a step-by-step workflow to add metadata to supplier documentation and create iiRDS packages in plusmeta
 - Share metadata vocabularies between the systems (plusmeta and EMPOLIS Service Express) via iiRDS based „Knowledge Packs“
 - Import supplier documentation via iiRDS into the content delivery portal EMPOLIS Service Express



SCENARIO: DOCUMENTATION OF A CUSTOMIZABLE PRODUCTION
SmartFactory Industry 4.0: Integrating supplier documentation

smartFactory^{KL}[®]



- KUKA industrial robot
AGILUS KR 6 R900 sixx
- arm
- central hand
- SmartFactory end effector
- FESTO Pneumatic system providing compressed air
- Bosch Rexroth 2 finger gripper GSP-P-16
- FESTO vacuum gripper ESG and Vacuum gripper valve ESH / ESS



- The plusmeta platform ensures that your data is ready for the future
- With the help of artificial intelligence, content is enriched with metadata and structures
- Via different step-by-step workflows many use cases can be implemented
- Plusmeta is fully compatible with iiRDS metadata
- Whether support, field service or end customer – with Service Express, you and your employees find the right solution step-by-step
- AI-based access to all relevant service information – no matter where it is located in the company
- Always the latest service information at hand, online and offline
- Easily capture and share new service knowledge
- Supports import of iiRDS packages

OPERATING PRINCIPLE

1. Add PDF document

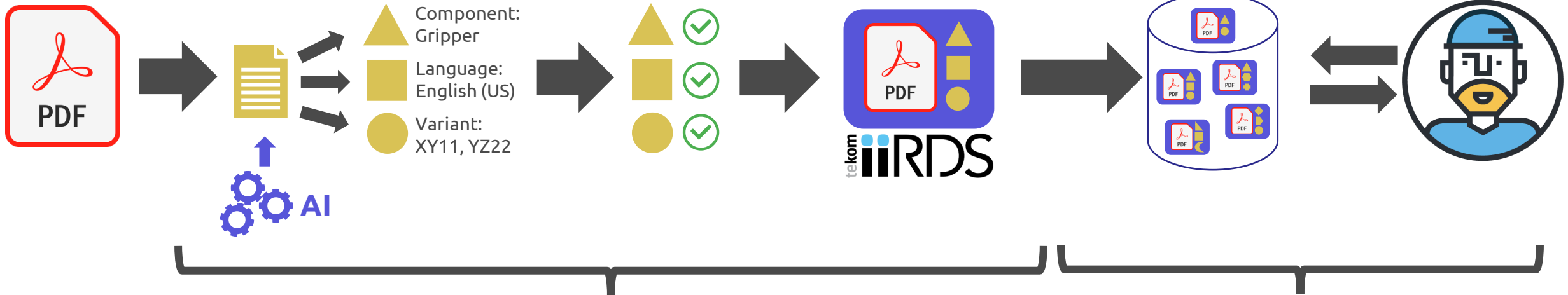
2. Extract metadata

3. Assign and approve metadata

4. Generate iiRDS package

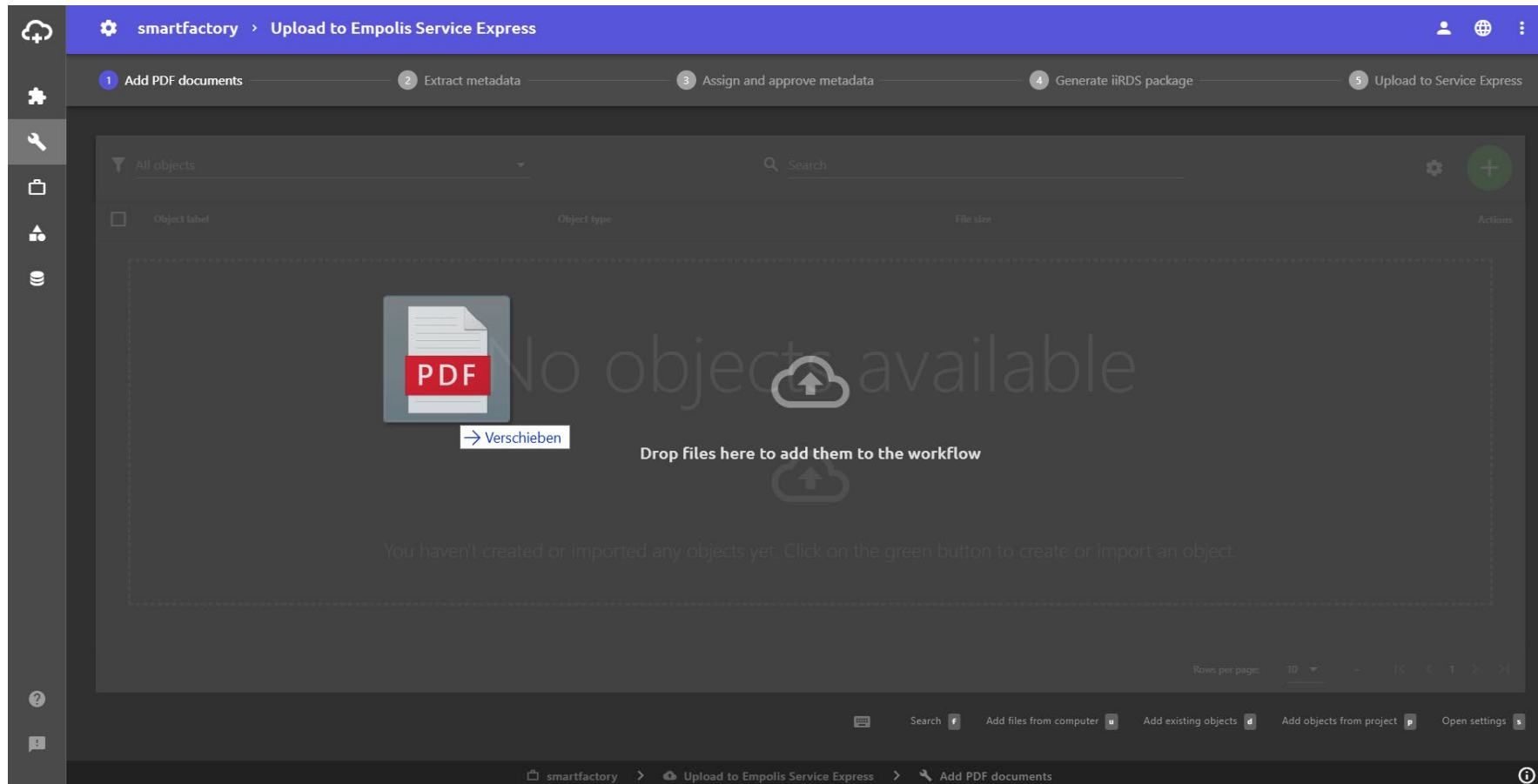
5. Upload to Service Express

6. Targeted access to information



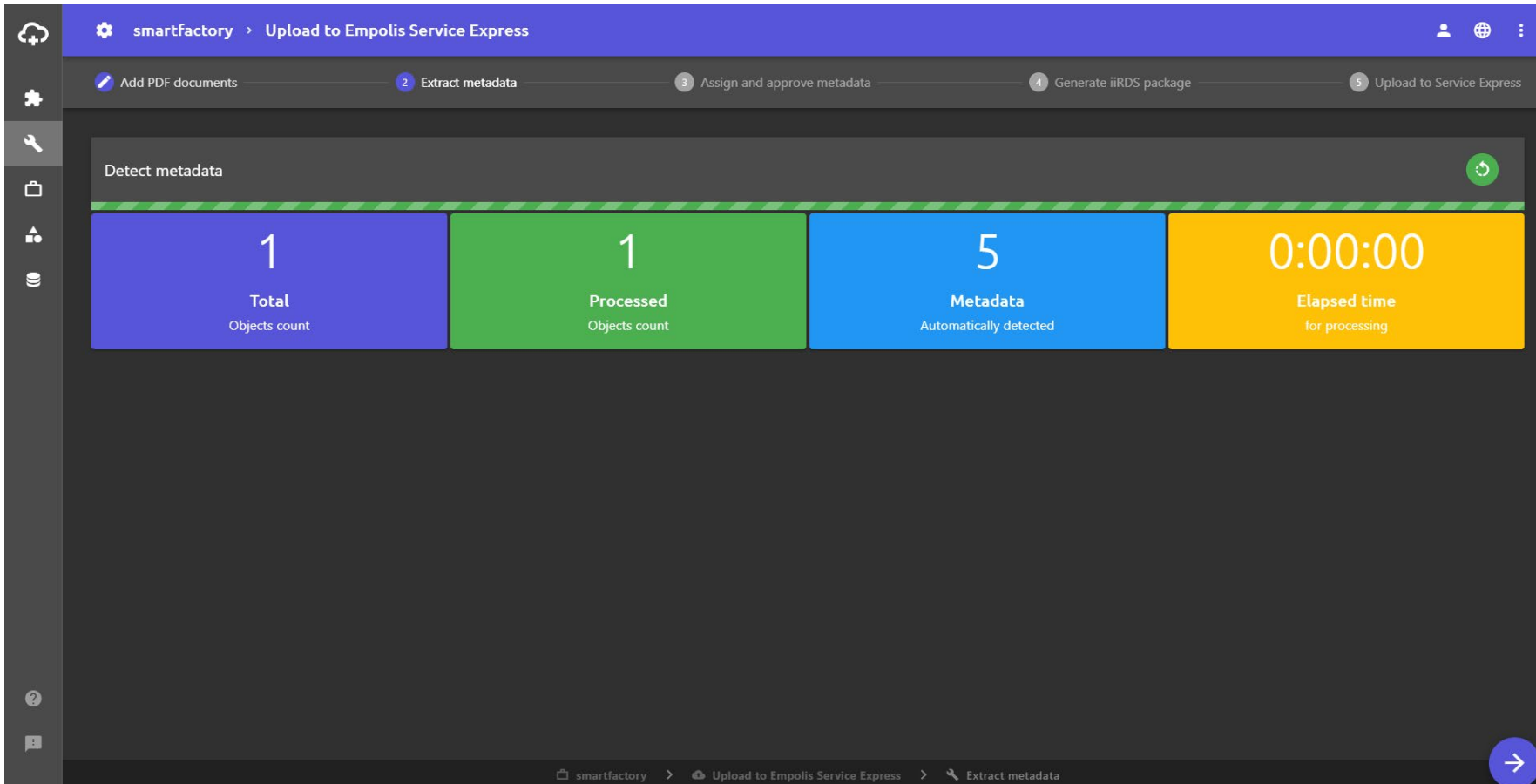
STEP 1

- After the workflow has been started, the supplier documentation must be uploaded



STEP 2

-  plusmeta analyses the document and recognizes metadata by using AI mechanisms



The screenshot displays the 'Detect metadata' step within a workflow titled 'Upload to Empolis Service Express'. The workflow progress bar shows five steps: 1. Add PDF documents, 2. Extract metadata (current step), 3. Assign and approve metadata, 4. Generate iiRDS package, and 5. Upload to Service Express. The 'Detect metadata' section features four summary cards:

Metric	Value
Total Objects count	1
Processed Objects count	1
Metadata Automatically detected	5
Elapsed time for processing	0:00:00

STEP 3

- The metadata found are now approved and corrected or extended if necessary

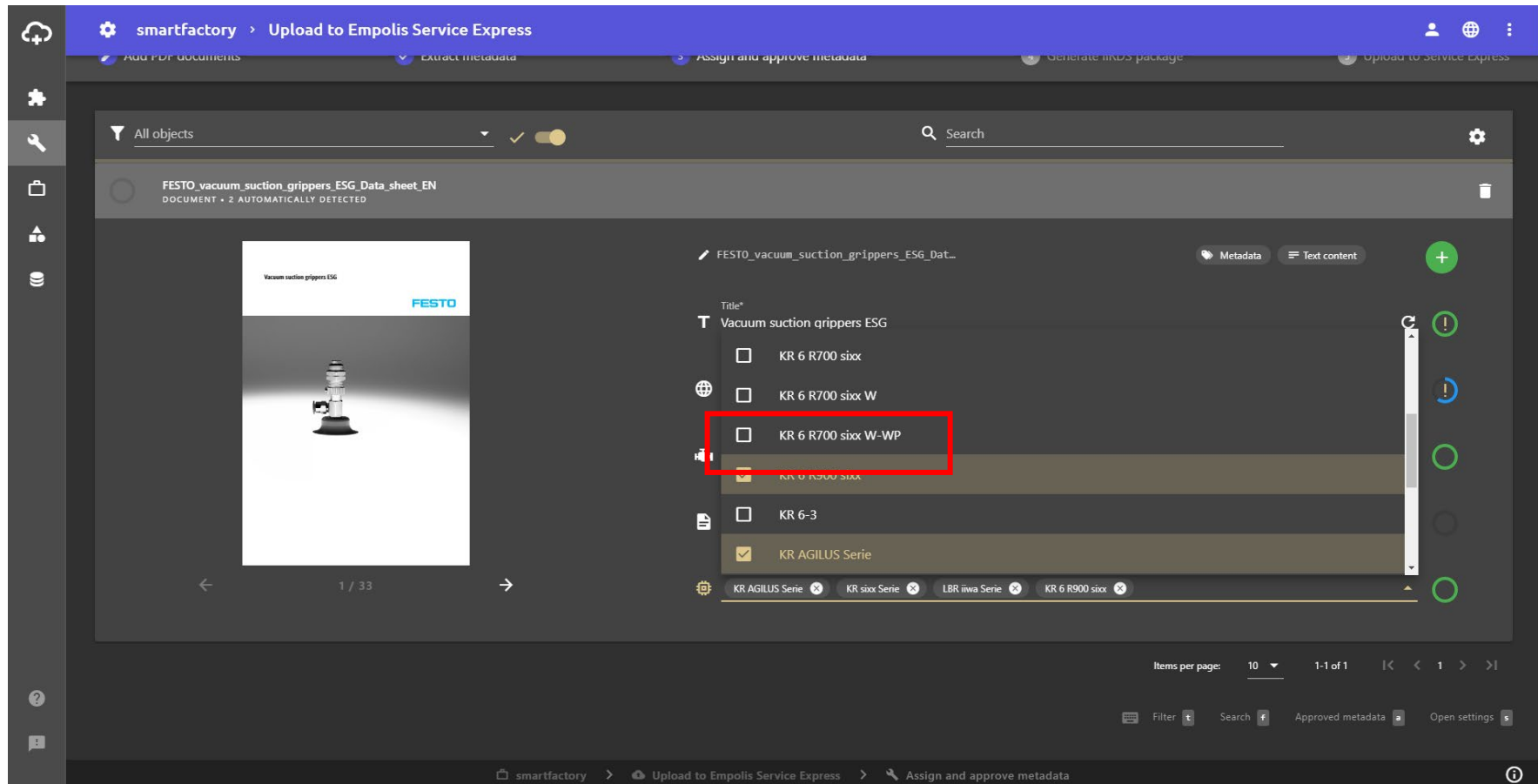
The screenshot displays the Plusmeta web interface during the 'Assign and approve metadata' step. The breadcrumb navigation shows 'smartfactory > Upload to Empolis Service Express'. A progress bar at the top indicates five steps: 'Add PDF documents', 'Extract metadata', 'Assign and approve metadata' (current step), 'Generate iiRDS package', and 'Upload to Service Express'. The main content area shows a document titled 'FESTO_vacuum_suction_grippers_ESG_Data_sheet_EN' with a thumbnail of a Festo vacuum gripper. The metadata table on the right lists the following fields and values:

Field	Value	Status
Title*	Vacuum suction grippers ESG	Warning (exclamation mark)
Language*	English (US)	Warning (exclamation mark)
Component	Gripper	Warning (exclamation mark)
Document type	Specification	Warning (exclamation mark)
Product variant	ABB 6-Achs-Roboter, KR AGILUS Serie	Warning (exclamation mark)

The interface also includes a search bar, a sidebar with navigation icons, and a footer with 'Items per page: 10' and '1-1 of 1'.

STEP 3

- In this example, the product variant 'KR 6 R900 six' is added manually as a metadata



STEP 4 and 5

- Finally, an iiRDS package is generated that can be transferred directly to EMPOLIS Service Express

The screenshot displays the 'smartfactory' interface for 'Upload to Empolis Service Express'. The top navigation bar includes a settings icon, the breadcrumb 'smartfactory > Upload to Empolis Service Express', and user/refresh icons. Below the navigation bar is a progress bar with five steps: 'Add PDF documents', 'Extract metadata', 'Assign and approve metadata', 'Generate iiRDS package', and 'Upload to Service Express' (the current step, indicated by a blue circle with the number 5). The main content area is titled 'Transfer file' and features a green progress indicator. Below this are four summary cards: a blue card for 'Total Objects count' (1), a green card for 'Processed Objects count' (1), a blue card for 'Progress Packages transferred' (100%), and a yellow card for 'Elapsed time for processing' (0:00:01). A blue notification box at the bottom right states 'Transfer successful'. The bottom of the interface shows a breadcrumb trail: 'smartfactory > Upload to Empolis Service Express > Upload to Service Express'.

iiRDS: Best Practice Example

SCENARIO: DOCUMENTATION OF A CUSTOMIZABLE PRODUCTION

SmartFactory Industry 4.0: Integrating supplier documentation

- Documentation in Empolis Service Express
One robot model selected to filter available information

The screenshot displays the EMPOLIS Service Express web application interface. The top navigation bar includes 'Übersicht', 'Suche', and 'Arbeitsplatz'. The left sidebar contains a 'Filter' section with 'Produkt' (9 items) and 'Servicefall' (3 items), and a 'Modell' section with 'ABB' (3 items) and 'KUKA' (46 items). Under 'KUKA', the 'KR AGILUS Serie' is expanded to 37 items, with 'KR 6 R900 sixx' selected and highlighted in blue, showing 34 results. The main content area shows search results for 'KR 6 R900 sixx (Modell)'. The first result is a PDF document titled 'KR 6 R900 sixx.pdf' (19.08.2019, Deutsch, ZIP Upload) with a description: '18.8.2019 KR 6 R900 sixx Identification number: AR2283 Artikelnummer 0000-205-456 Hersteller KUKA Roboter Produktbild'. Other results include 'Problemdiagnose Endeffektor' (26.08.2019, Deutsch) and 'Auswahl des Roboter-Herstellers und des -Modells' (22.08.2019, Deutsch). A blue circular button with a menu icon is visible in the bottom right corner of the interface.

SCENARIO: DOCUMENTATION OF A CUSTOMIZABLE PRODUCTION

SmartFactory Industry 4.0: Integrating supplier documentation

- Filtering by component „Effector“ and robot type „Industrieroboter“

The screenshot displays the EMPOLIS Information Management web application. The top navigation bar includes 'Übersicht', 'Suche', and 'Arbeitsplatz'. The left sidebar contains filter sections for 'Filter', 'Typ', and 'Hersteller'. The 'Filter' section has 'Effektor' checked (16 results). The 'Typ' section has 'Industrieroboter' checked (16 results). The 'Hersteller' section lists Bosch Rexroth (10), FESTO (14), KUKA (16), and Pepperl und Fuchs (11). The main content area shows 16 search results for 'KR 6 R900 sixx (Modell)', 'Industrieroboter (Typ)', and 'Effektor (Bauteile)'. The results are sorted by 'Relevanz'. The first result is 'Problemdiagnose Endeffektor' (26.08.2019 • Deutsch), followed by 'FESTO Vakuumsaugventil ISV ESG Datenblatt DE' (12.08.2019 • Deutsch • ZIP Upload), 'Festo Vakuumsauggreifers ESG / ESS montieren oder auswechseln' (Anleitung, Arbeitsanleitung • 21.08.2019 • Deutsch), 'FESTO_Vakuumsauggreifer ESG_Datenblatt_DE' (12.08.2019 • Deutsch • ZIP Upload), and 'Festo ESH Saugerhalter montieren oder auswechseln' (Anleitung, Arbeitsanleitung • 29.08.2019 • Deutsch).

SCENARIO: DOCUMENTATION OF A CUSTOMIZABLE PRODUCTION

SmartFactory Industry 4.0: Integrating supplier documentation

- Supplier documentation available including metadata provided by plusmeta

The screenshot displays the EMPOLIS INFORMATION MANAGEMENT software interface. The top navigation bar includes 'Übersicht', 'Suche', and 'Arbeitsplatz'. A left sidebar contains filter options for 'Effektor', 'Elektronik und Sensoren', and 'Gehäuse', along with a 'Typ' section for 'Gelenkarmroboter', 'Industrieroboter', and 'Schwenkarm-Roboter', and a 'Hersteller' section for 'Bosch Rexroth', 'FESTO', 'KUKA', and 'Pepperl und Fuchs'. The main content area shows a list of documents, with the selected document being 'FESTO_Vakuumsauggreifer ESG_Date...'. The right sidebar shows the 'Details' view for this document, including a description, page information, and a 'Metadaten' section with fields for 'Modell', 'Typ', 'Informationstyp', 'Bauteile', 'Hersteller', 'Sprache', 'Dateiname', 'Dateigröße', and 'Treffertyp'.

Filter	Count
<input checked="" type="checkbox"/> Effektor	16
<input type="checkbox"/> Elektronik und Sensoren	15
<input type="checkbox"/> Gehäuse	1
Mehr... (11)	

Typ	Count
<input type="checkbox"/> Gelenkarmroboter	3
<input checked="" type="checkbox"/> Industrieroboter	16
<input type="checkbox"/> Schwenkarm-Roboter	2

Hersteller	Count
<input type="checkbox"/> Bosch Rexroth	10
<input type="checkbox"/> FESTO	14
<input type="checkbox"/> KUKA	16
<input type="checkbox"/> Pepperl und Fuchs	11

Document Title	Date	Language	Upload Type
FESTO Vakuumsaugventil ISV ESG Dat...	12.08.2019	Deutsch	ZIP Upload
Festo Vakuumsauggreifers ESG / ESS ...	21.08.2019	Deutsch	Anleitung, Arbeitsanleitung
FESTO_Vakuumsauggreifer ESG_Date...	12.08.2019	Deutsch	ZIP Upload
Festo ESH Saugerhalter montieren oder...	29.08.2019	Deutsch	Anleitung, Arbeitsanleitung
Signalgeber / Endschalter am Endeffekt...	21.08.2019	Deutsch	
KUKA Greifer auswechseln	21.08.2019	Deutsch	Anleitung, Arbeitsanleitung

Field	Value
Modell	KR AGILUS Serie. KR 6 R900 sixx
Typ	Industrieroboter
Informationstyp	Datenblatt
Bauteile	Effektor, Vakuumsauggreifer
Hersteller	FESTO.KUKA
Sprache	Deutsch
Dateiname	FESTO_Vakuumsauggreifer ESG_Datenbla...tt_DE.PDF
Dateigröße	449,78 KB
Treffertyp	Dokument

This best practice example has shown that the interaction of the two tools plusmeta and EMPOLIS Service Express makes it easy to classify supplier documentation and make it available for targeted access in a Content Delivery Portal

- plusmeta automatically enriches legacy pdfs with iiRDS metadata in an easy step-by-step workflow
- iiRDS is used for storage and exchange of the supplier documentation
- The content delivery portal EMPOLIS Service Express makes the documentation accessible in a targeted manner



Dr. Jan Oevermann
plusmeta GmbH
Gartenstraße 69
D-76135 Karlsruhe
jan.oevermann@plusmeta.com

<https://plusmeta.de>



Dr. Martin Kreutzer
Empolis Information Management GmbH
Europaallee 10
D-67657 Kaiserslautern
martin.kreutzer@empolis.com

<https://www.empolis.com/>
<https://www.service.express/>