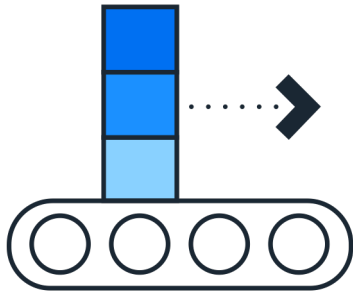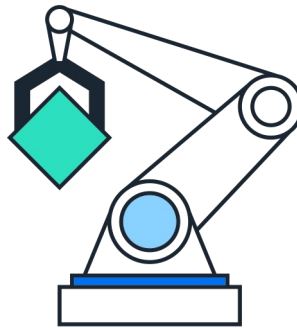# Warum die „First"-Strategie Ihren Wettbewerbsvorteil sichert

Marian Zeis, Independent SAP Developer

SAP Fiori elements makes it faster and easier to build SAPUI5 apps

- Boosts Developer Productivity

  - Build SAP Fiori apps faster and more easily than manually coding by using the same framework that SAP uses.

- Drives UX Consistency

  - Spend more time on the business logic to implement business needs and less time coding the UI since the framework provides the UI.

- Enables Enterprise Readiness

  - Give your business users the enterprise-grade functionality they expect without having to develop it yourself.

# SAP Fiori elements apps run in the browser and connect to your SAP system
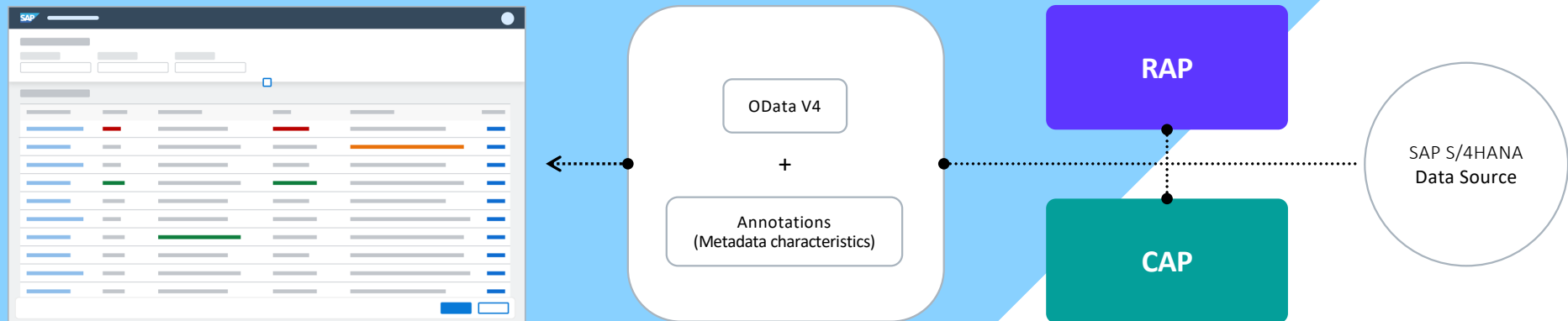
Example of SAP Fiori elements app floorplan with building blocks coming together

OData V4

+

Annotations
(Metadata characteristics)

RAP

CAP

SAP S/4HANA
Data Source

- RAP: ABAP RESTful Programming Model
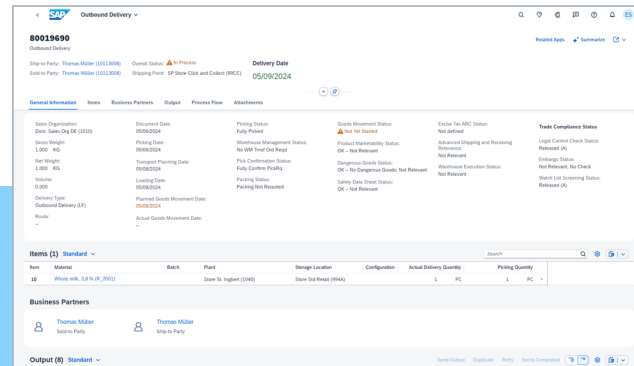 Built primarily for SAP's ABAP environment

- CAP: Cloud Application Programming Model
  Designed for cloud applications

Standard floorplans boost developer productivity

Most enterprise use cases involve providing an overview, lists of business objects and management of these business objects
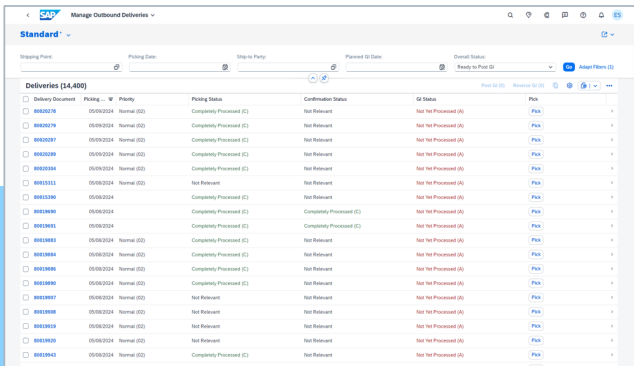
List report page | Display business objects

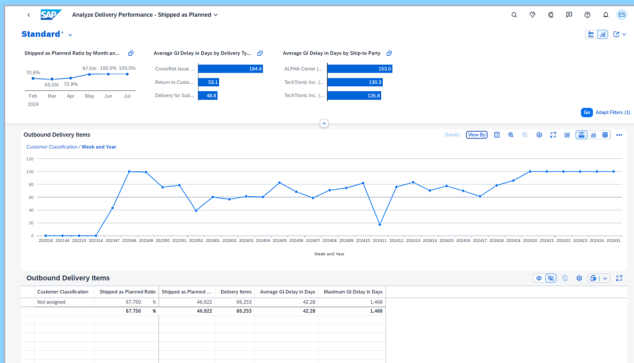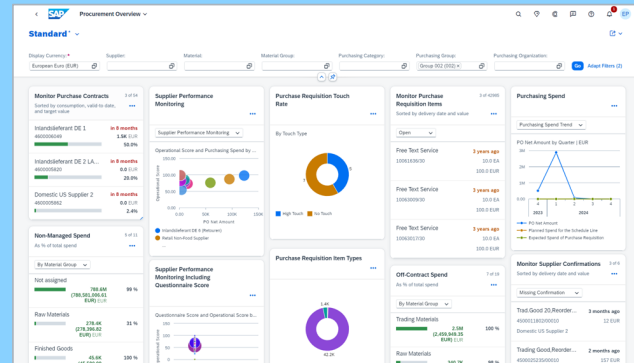Object page | Manage business objects

Also:
Work list page | View tasks
Forms page | Enter data
Custom page | Do whatever you want

Analytical list page | Filter visually

Overview page | Review business relevant data

What is Fiori Elements?
Out-of-the-box Features

Variant management

Search

Data lists

Overview page

Analytical list page

Filtering

Sorting

Actions

Personalization

Export to Microsoft Excel

Editing (including draft management)

Navigation

List report page

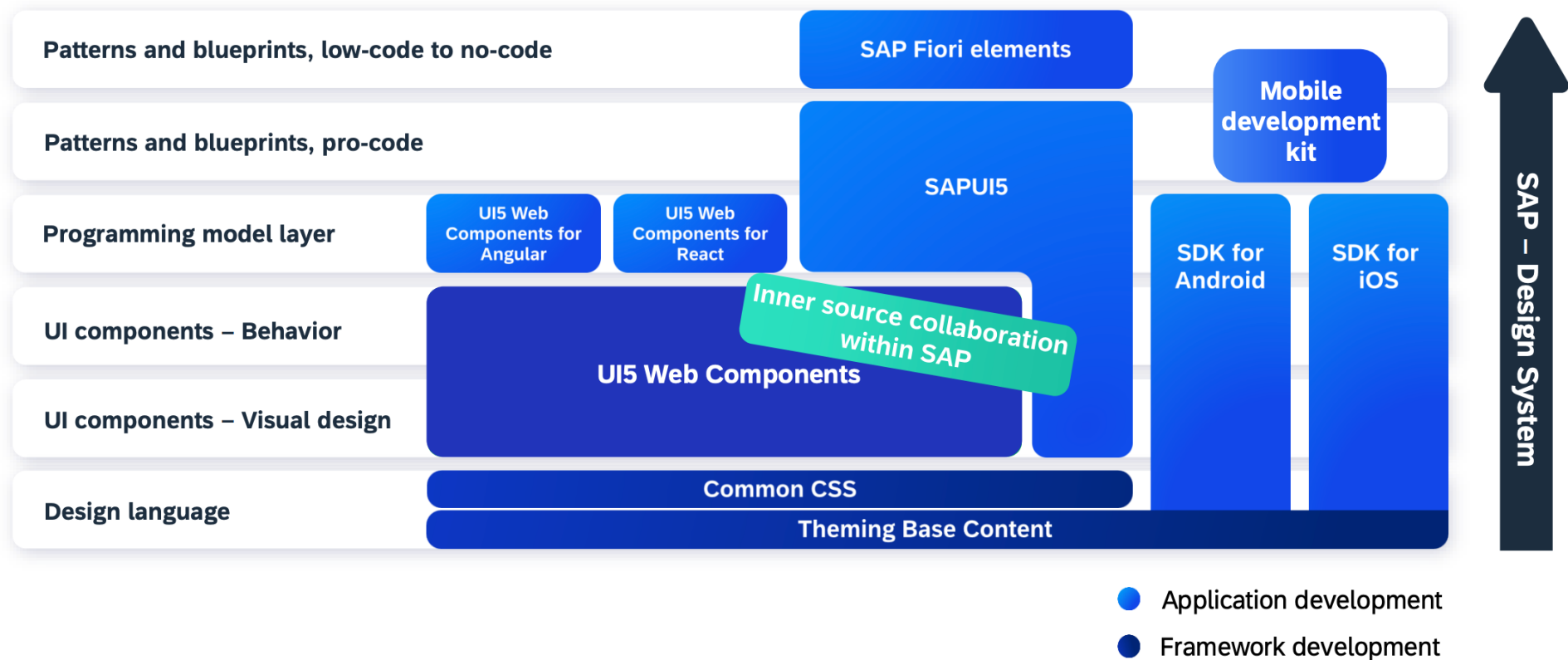Object details

Object page

Source: SAP

What is Fiori Elements?
SAP UI Technologies

Patterns and blueprints, low-code to no-code		**SAP Fiori elements**		
Patterns and blueprints, pro-code				**Mobile development kit**
Programming model layer	**UI5 Web Components for Angular** / **UI5 Web Components for React**	**SAPUI5**	**SDK for Android** / **SDK for iOS**	
UI components – Behavior	**UI5 Web Components** — *Inner source collaboration within SAP*			
UI components – Visual design				
Design language	**Common CSS** / **Theming Base Content**			

SAP – Design System

● Application development
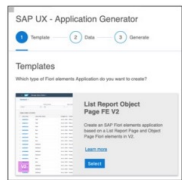● Framework development

What has improved recently?
Tools support

Application Generator
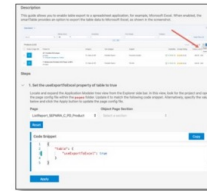Creates the project environment for development

Page Map & Editor
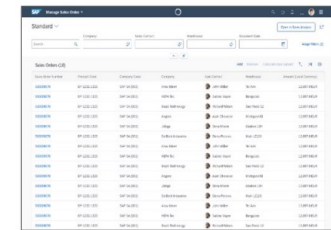Allows editing of the structure of the app: pages, properties, and navigation

Guided Development
Provides step-by-step development instructions and generates code snippets in-line
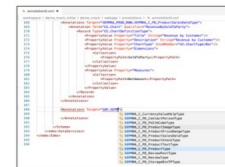
Application Preview
Provides preview of web app in the browser either with mock data or live data

Service Modeler
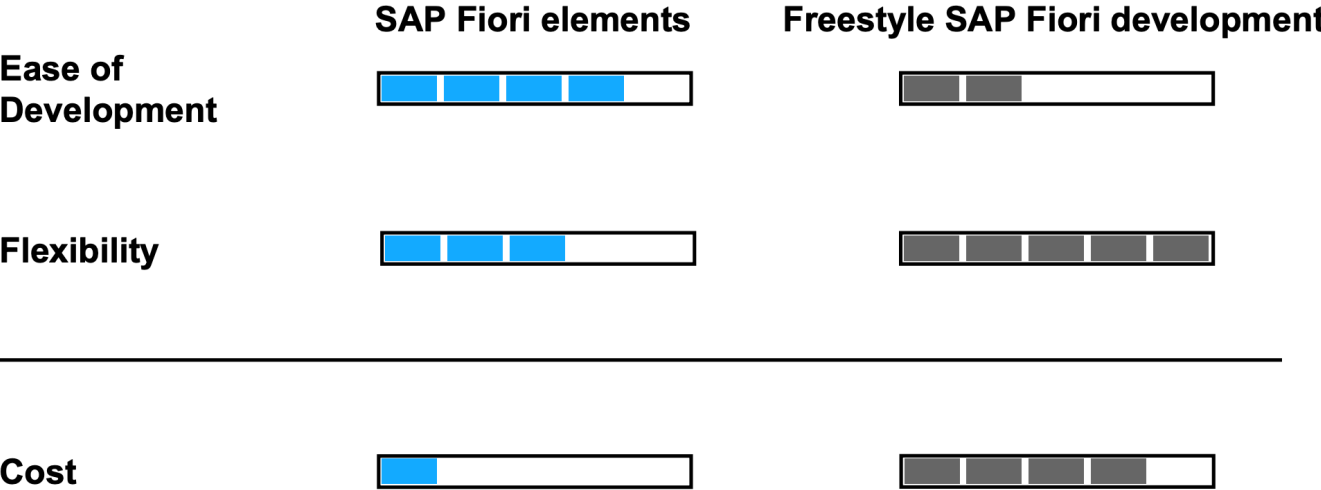Visualizes service entities, relations, properties, and annotations

Code Completion
Delivers a language server protocol for annotations with micro-snippets and diagnostics

Available in
SAP Business Application Studio
and
Visual Studio Code

What has improved recently?
Flexible Programming Model

	SAP Fiori elements	Freestyle SAP Fiori development
Ease of Development	▰▰▰▰▱	▰▰▱▱▱
Flexibility	▰▰▰▱▱	▰▰▰▰▰
Cost	▰▱▱▱▱	▰▰▰▰▱

What has improved recently?
Flexible Programming Model

Flexible programming model blends SAP Fiori elements and freestyle SAPUI5
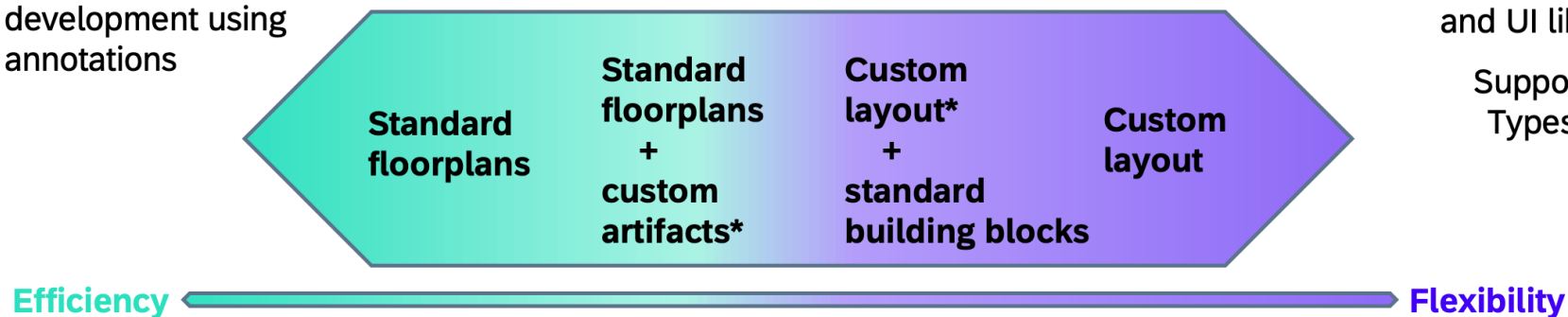
Using OData V4, developers have a **continuum** of options instead of an either/or decision.

SAP Fiori elements
Metadata-driven development using annotations

Flexible programming model

SAPUI5 freestyle
JavaScript framework and UI library

Support for Typescript

Standard floorplans

Standard floorplans + custom artifacts*

Custom layout* + standard building blocks

Custom layout

Efficiency ←→ **Flexibility**

*Leveraging standard building blocks and SAPUI5 controls and custom code

Source: SAP

What has improved recently?
Flexible Programming Model

Source: SAP

What has improved recently?
Fiori Elements Extensions

Source: SAP
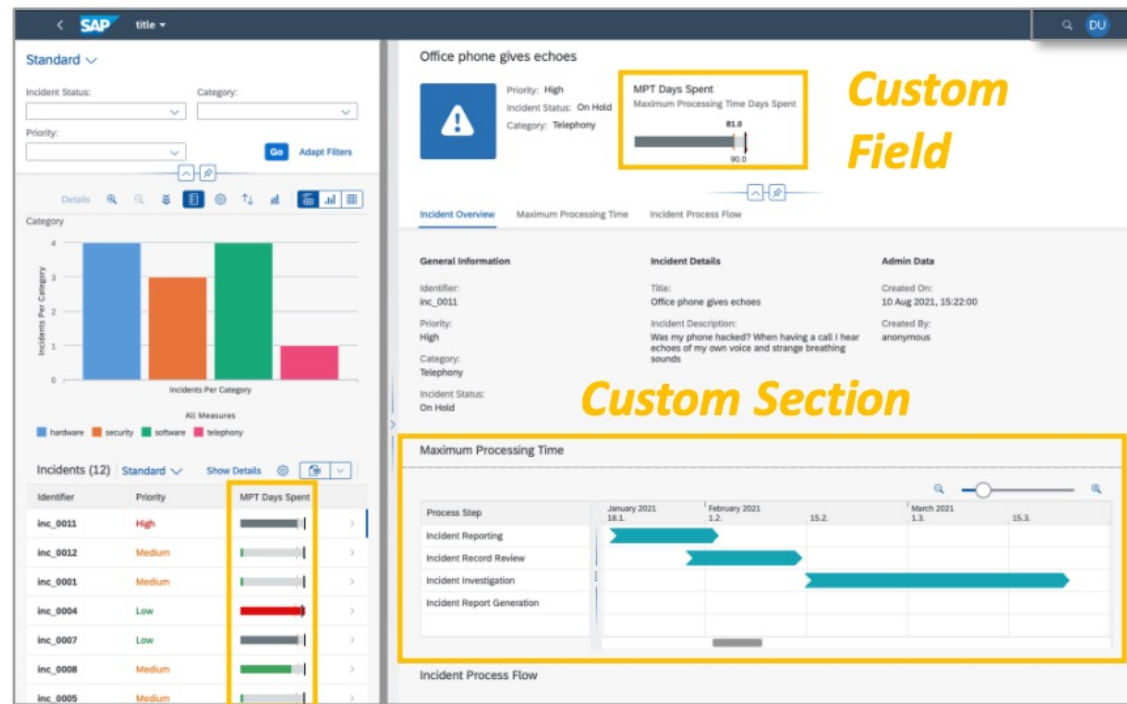
Why Fiori Elements?
Flexibility with UI Adaption

What has improved recently?
Framework Support – CAP/RAP

SERVICE CONSUMPTION

BUSINESS SERVICES PROVISIONING

DATA MODELING & BEHAVIOR

SAP FIORI UI	WEB API
Consume OData UI services	Consume OData Web APIs

SERVICE BINDING – Bind to protocol version and scenario

SERVICE DEFINITION – Define scope to be exposed

BUSINESS OBJECT PROJECTION
- CDS: Projection views
- BDEF: Behavior projection
- ABAP: Behavior implementation

BUSINESS OBJECTS
- CDS: Data modeling
- BDEF: Behavior definition
- ABAP: Behavior implementation

QUERIES
- CDS: Data modeling

Left diagram

UI Markup → UIs/Consumers

Service Models —(Annotations)→ Services → (Implementation) → Event Handlers

Domain Models —(Views)→ Data Sources

Services → Data Sources

Event Handlers → Data Sources

Legend
- CDS Models
- Generic Runtimes
- Custom Code

Source: Scrrenshot left / screenshot right

What has improved recently?
Framework Support – CAP/RAP


```
using IncidentService as service from '../../srv/incidentservice';

annotate service.SafetyIncidents with @UI : {
  SelectionFields : [
  category_code,
  priority_code,
  incidentStatus_code
  ],
  LineItem        : [{
    $Type : 'UI.DataField',
    Value : title,
    Label : 'Incident Title',
  },
  {
    $Type : 'UI.DataField',
    Value :
  }, ],
};
```

| category_code |
| closeIncident |
| createdAt |
| createdBy |
| description |
| incidentFlow |


```
*[HBP] ZXMASTERSEARCH

1  @Metadata.layer: #CUSTOMER
2
3  @UI: {
4      presentationVariant: [{ sortOrder: [{ by: 'id', direction: #DESC }] }]
5  }
6  annotate view zmastersearch with
7  {
8    @UI: {
9      lineItem: [ { position: 10, importance: #HIGH } ],
10     selectionField: [{ position: 10 }]
11   }
12   @EndUserText: { label: 'Typ',
13     quickInfo: 'Kunde, ABO oder EBE' }
14   type;
15   @UI: {
16     lineItem: [ { position: 20, importance: #HIGH } ],
17     selectionField: [{ position: 20 }]
18   }
19   @EndUserText: { label: 'ID',
20       quickInfo: 'ID' }
21   id;
22   @UI: {
23     lineItem: [ { position: 30, importance: #HIGH } ],
24     selectionField: [{ position: 30 }]
25   }
26   @EndUserText: { label: 'Name 1 / Bestellnummer' }
27   txt1;
28   @UI: {
29     lineItem: [ { position: 40, importance: #HIGH } ],
30     selectionField: [{ position: 40 }]
31   }
32   @EndUserText: { label: 'Name 2' }
33   txt2;
34   @UI: {
35     lineItem: [ { position: 50, importance: #MEDIUM} ],
36     selectionField: [{ position: 50 }]
37   }
38   @EndUserText: { label: 'Referenzkunde' }
39   ref_cust;
40 }
```
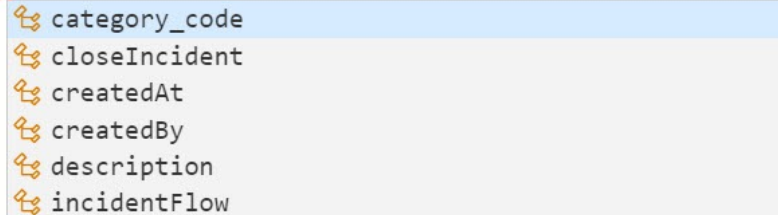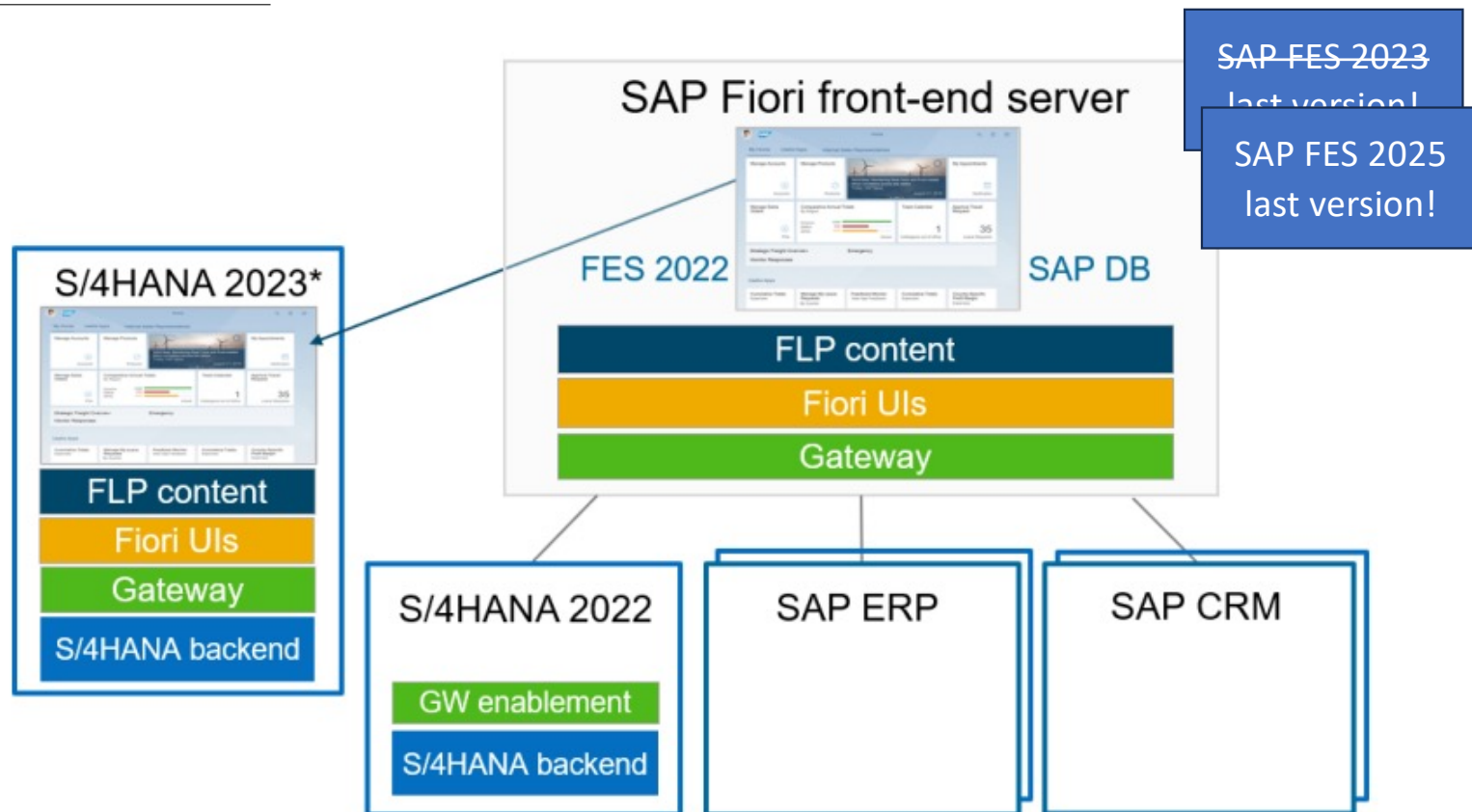
How to use the newest Technologies (UI5, RAP, CAP)
Deployment Options

SAP FES 2023 last version!

SAP FES 2025 last version!

SAP Fiori front-end server

S/4HANA 2023*
- FLP content
- Fiori UIs
- Gateway
- S/4HANA backend

FES 2022   SAP DB
- FLP content
- Fiori UIs
- Gateway

S/4HANA 2022
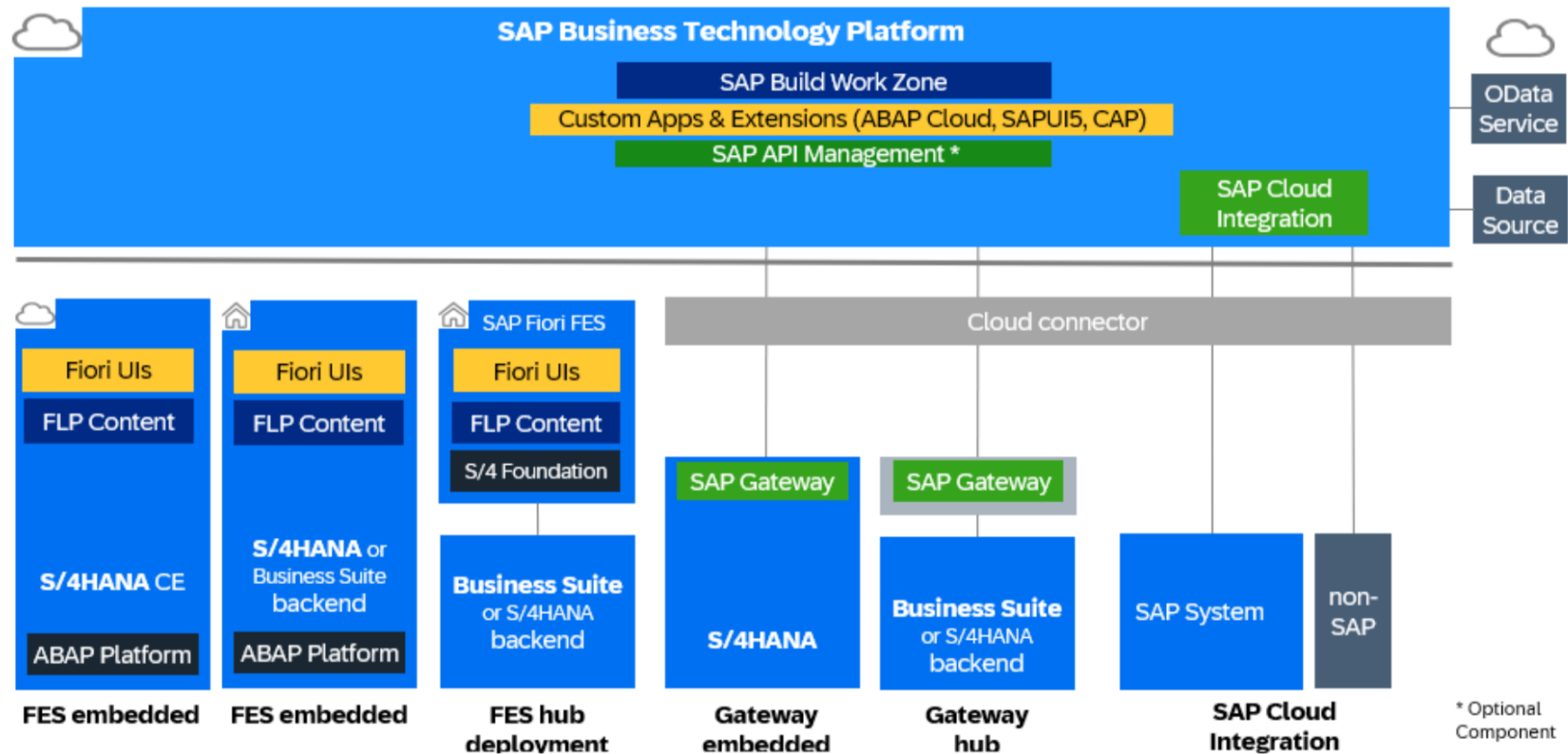- GW enablement
- S/4HANA backend

SAP ERP

SAP CRM

* Additional SAP S/4HANA system with a different version, e.g. 2023

Source:SAP

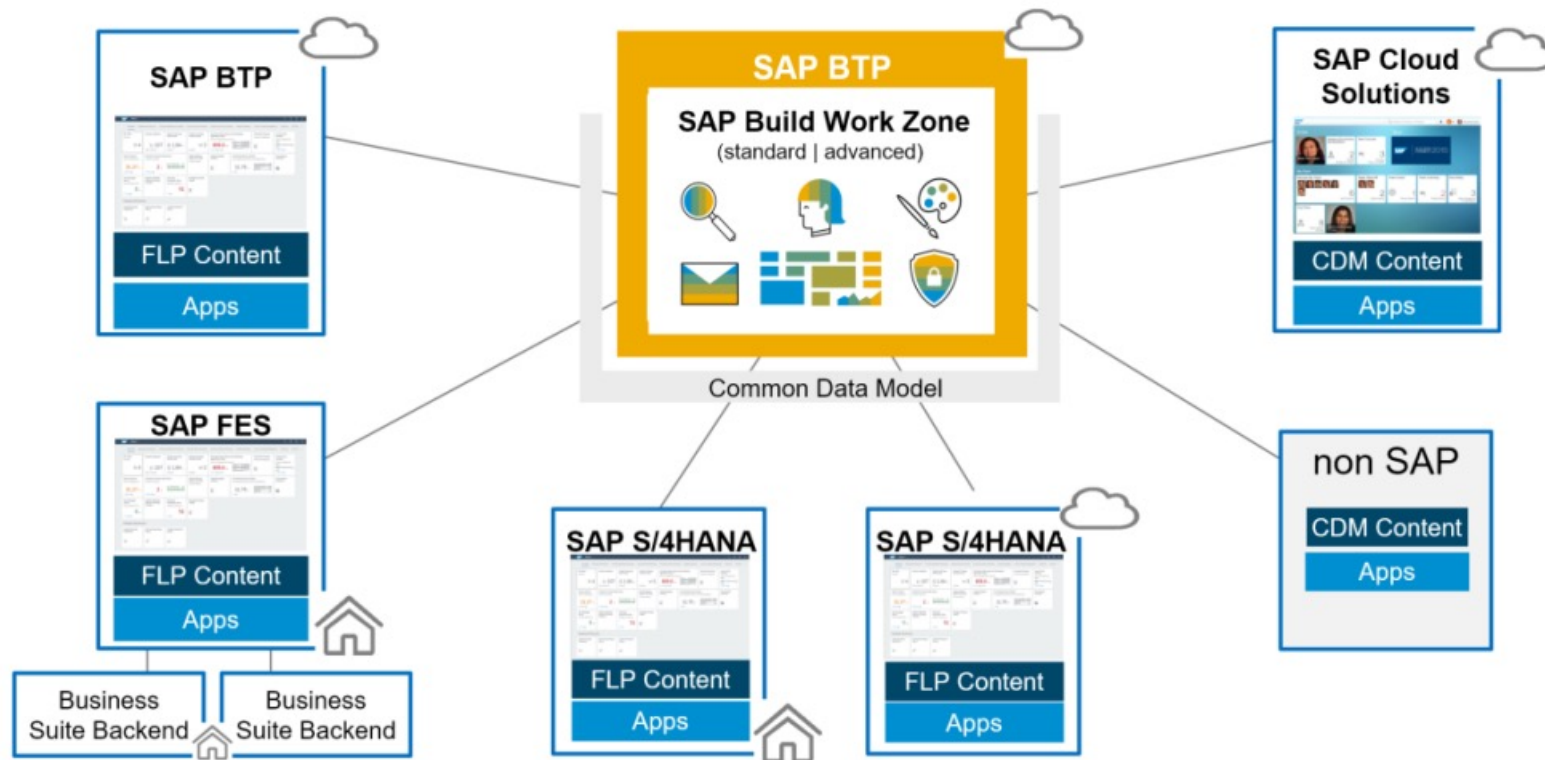# How to use the newest Technologies (UI5, RAP, CAP)
Deployment Options

SAP Fiori Deployment – OData Provider Options

Source:

How to use the newest Technologies (UI5, RAP, CAP)
Deployment Options

Wie kann man Fiori-Elemente mit RAP/CAP adaptieren?

Fiori elements Erfordert eine dedizierte Phase für ein tiefgehendes Verständnis und die Eingewöhnung.

Eine effektive Implementierung erfordert starke Unterstützung durch das Management:
Einen „Fiori-Elements-first"-Ansatz verfolgen.
RAP-Entwicklung (Restful Application Programming) priorisieren.
Den Einsatz von SAP-Fiori-Standardanwendungen betonen.
Das Fiori Launchpad nutzen, um klassische Transaktionen zu integrieren, wo dies sinnvoll/umsetzbar ist.
Qualifizierte UI5-Entwickler sind nur begrenzt verfügbar.
ABAP-Entwickler können UI-Änderungen umsetzen, ohne umfangreiches Frontend-Entwicklungswissen zu benötigen.

Wrap up

Where to Find More Information

- https://learning.sap.com/
- Documentation
  - SAPUI5
    - https://ui5.sap.com
  - RAP
    - https://help.sap.com/docs/ABAP_PLATFORM_NEW/fc4c71aa50014fd1b43721701471913d/289477a81eec4d4e84c0302fb6835035.html
  - CAP
    - https://cap.cloud.sap/docs/
  - Fiori Tools
    - https://help.sap.com/docs/SAP_FIORI_tools?locale=en-US
  - Flexible Programming Model
    - https://sapui5.hana.ondemand.com/test-resources/sap/fe/core/fpmExplorer/index.html
  - SAP Build Work Zone, standard edition (aka. Central Fiori Launchpad)
    - https://help.sap.com/docs/build-work-zone-standard-edition?locale=en-US
  - SAP Fiori Fronted End Server Deployment Options (FES)
    - https://blogs.sap.com/2020/04/01/sap-fiori-deployment-options-and-sap-fiori-front-end-server-strategy-update-2020/
    - https://www.sap.com/docs/download/2018/02/f0148939-f27c-0010-82c7-eda71af511fa.pdf