

SAP Business Technology Platform Technical Academy Enablement for SBN

March 2021

What Is This **Technical Academy** All About?

Join us for a **self-paced virtual learning series** where you will learn how to build an end-to-end safety incident management application and get to work with the core components of the SAP Business Technology Platform and SAP Business Technology Platform.

Through this technical academy, you will:

- Learn the architectural overview of SAP's Business Technology Platform
- Get your hands dirty with hands-on exposure to the services required to build your application,
- Engage virtually in small breakout sessions with SAP technical experts as you develop your app
- Finish with an application you built running on a trial instance of SAP Business Technology Platform

Your Virtual **SAP Business Technology Platform** Expert Team



- ❖ Dietmar Steinbichler
- ❖ Kurt Kristiansen



All of You!
(by the end of this training 😊)

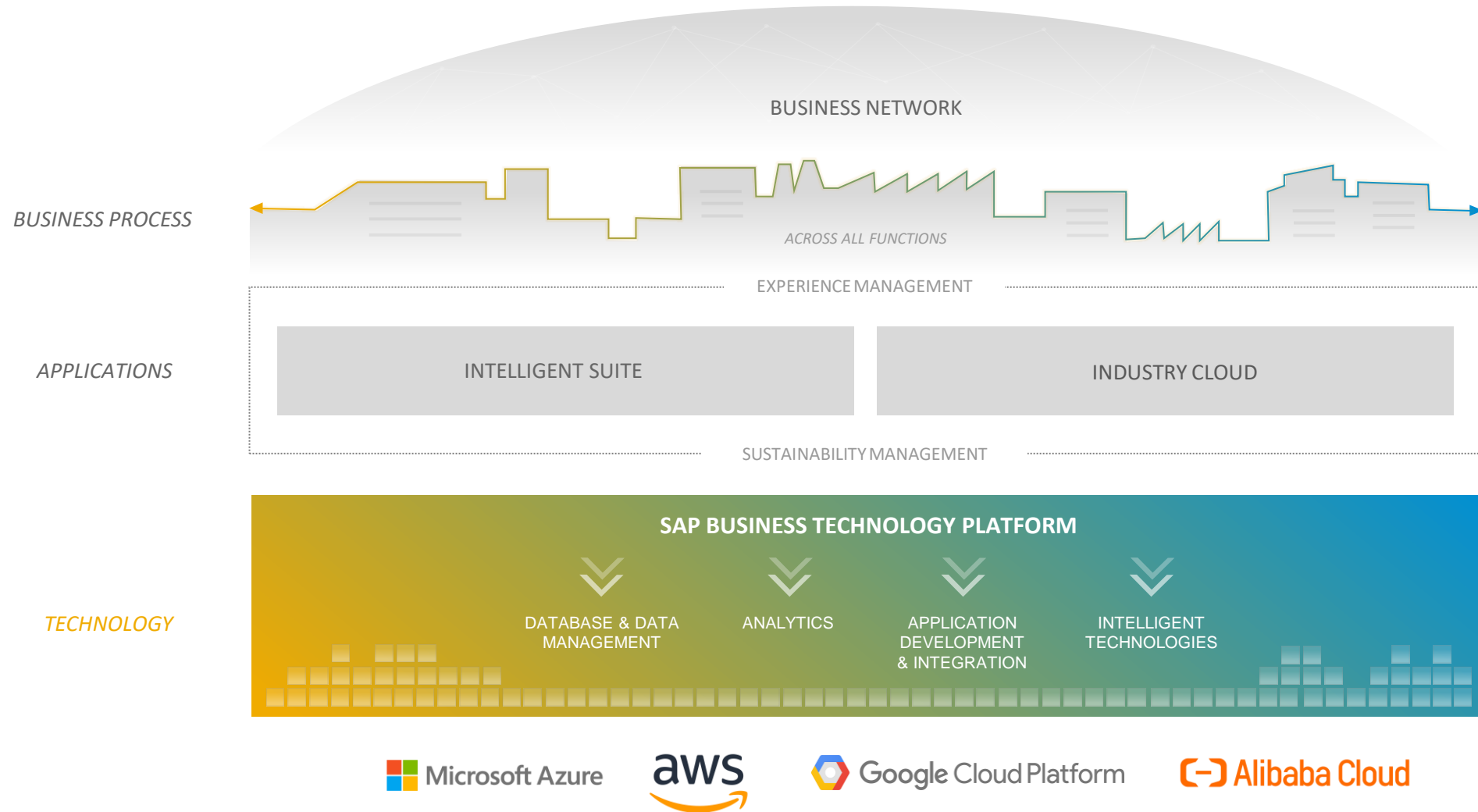
What is SAP Business Technology Platform

f.k.a. SAP Business Technology



SAP Business Technology Platform

The Platform for the Intelligent Enterprise



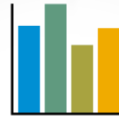
SAP Business Technology Platform

The Platform for the Intelligent Enterprise



DATABASE AND DATA MANAGEMENT

Capture, manage,
and **govern** your data
to drive better business
outcomes



ANALYTICS

Analyze all your data to
accelerate **insights** and
transform the data you have
into the answers you need



APP DEVELOPMENT AND INTEGRATION

Integrate and **extend**
applications – build new
ways to access and
interact with your data

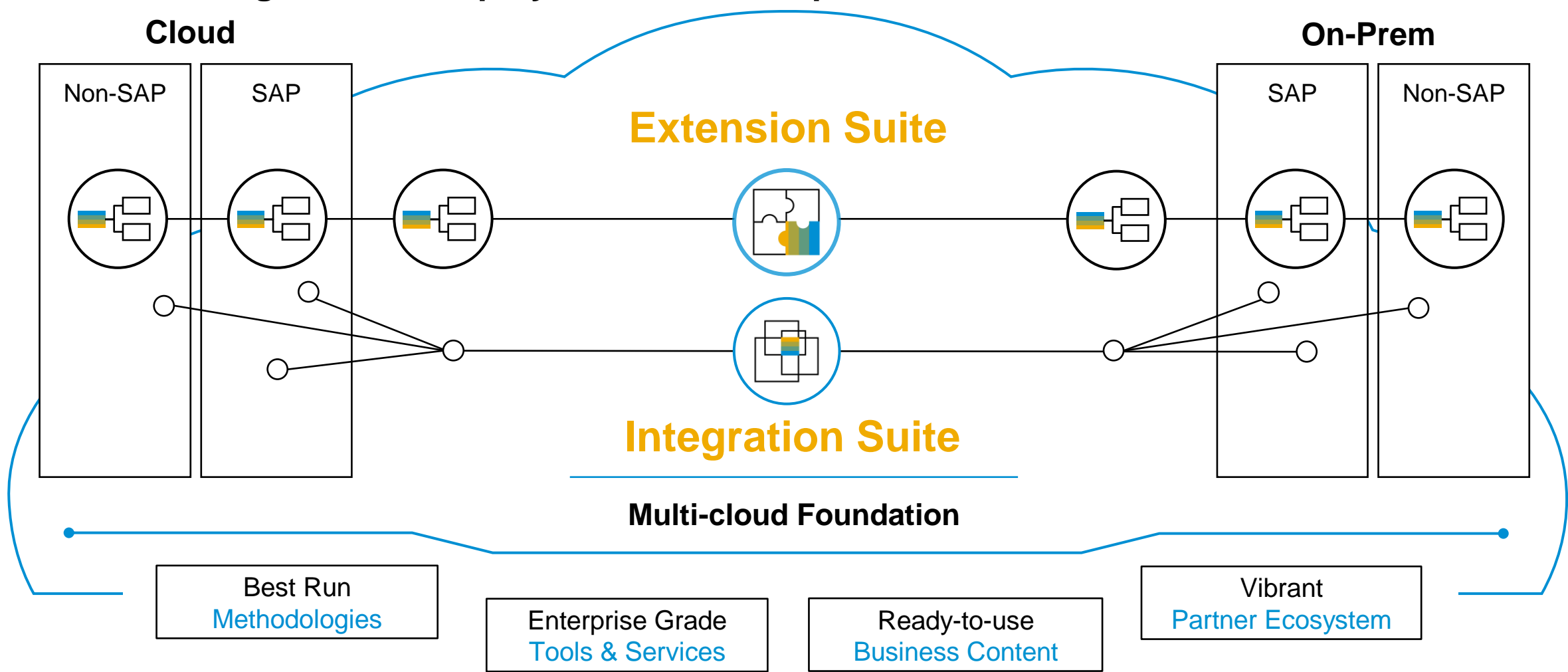


INTELLIGENT TECHNOLOGIES

Data is the fuel
propelling intelligent
technologies forward –
optimizing processes,
and igniting **innovation**

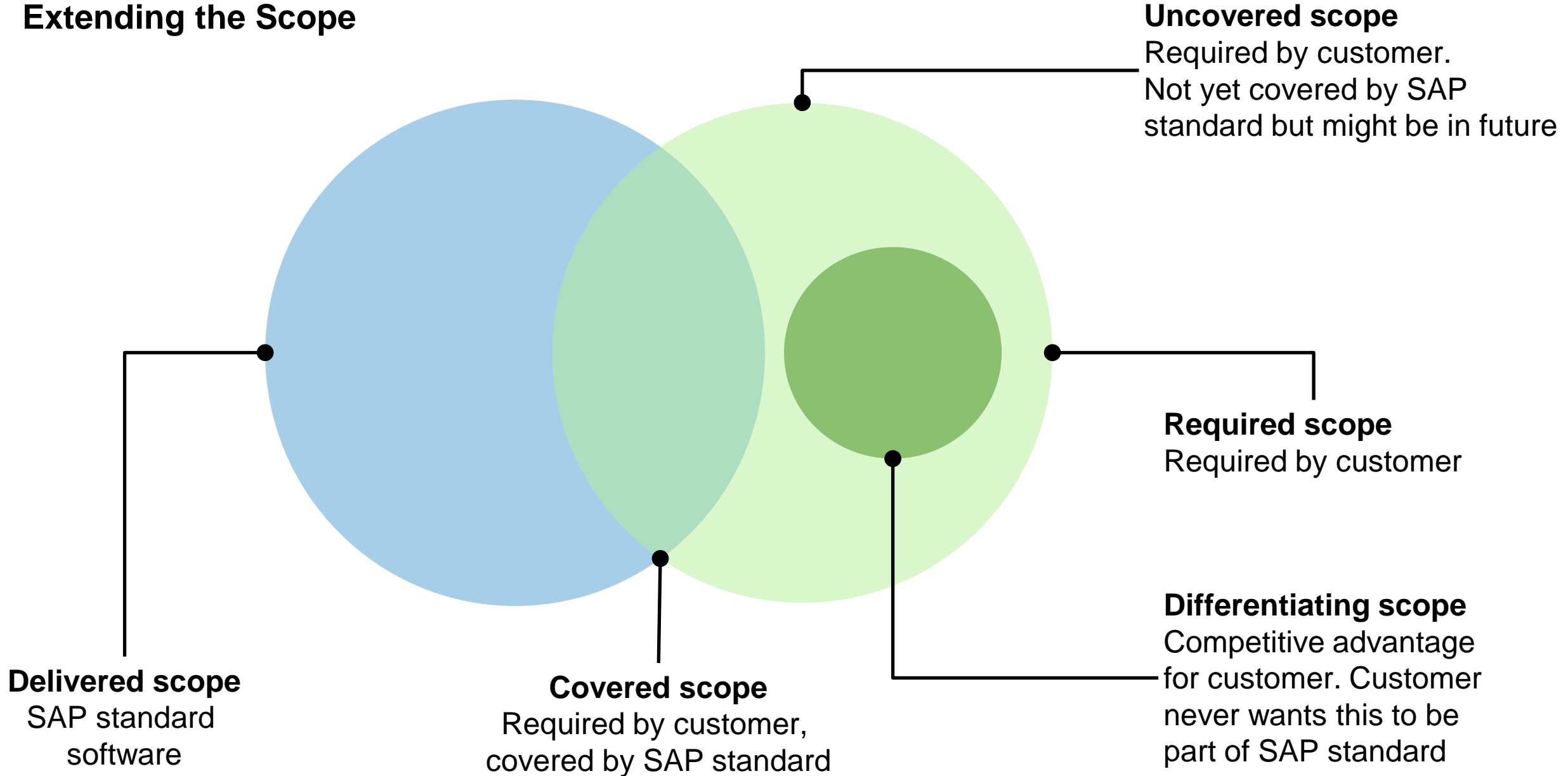
SAP Business Technology Platform – Elevate Your Enterprise Experience

Accelerate Integrations. Simplify Extensions. Expand Business Value.



Introduction to SAP Business Technology Platform Extension Suite

Extending the Scope



Overview Of The Use Case



Safety Incident Management Scenario



Worker on shop floor notices a potential safety issue and logs an incident in a mobile application



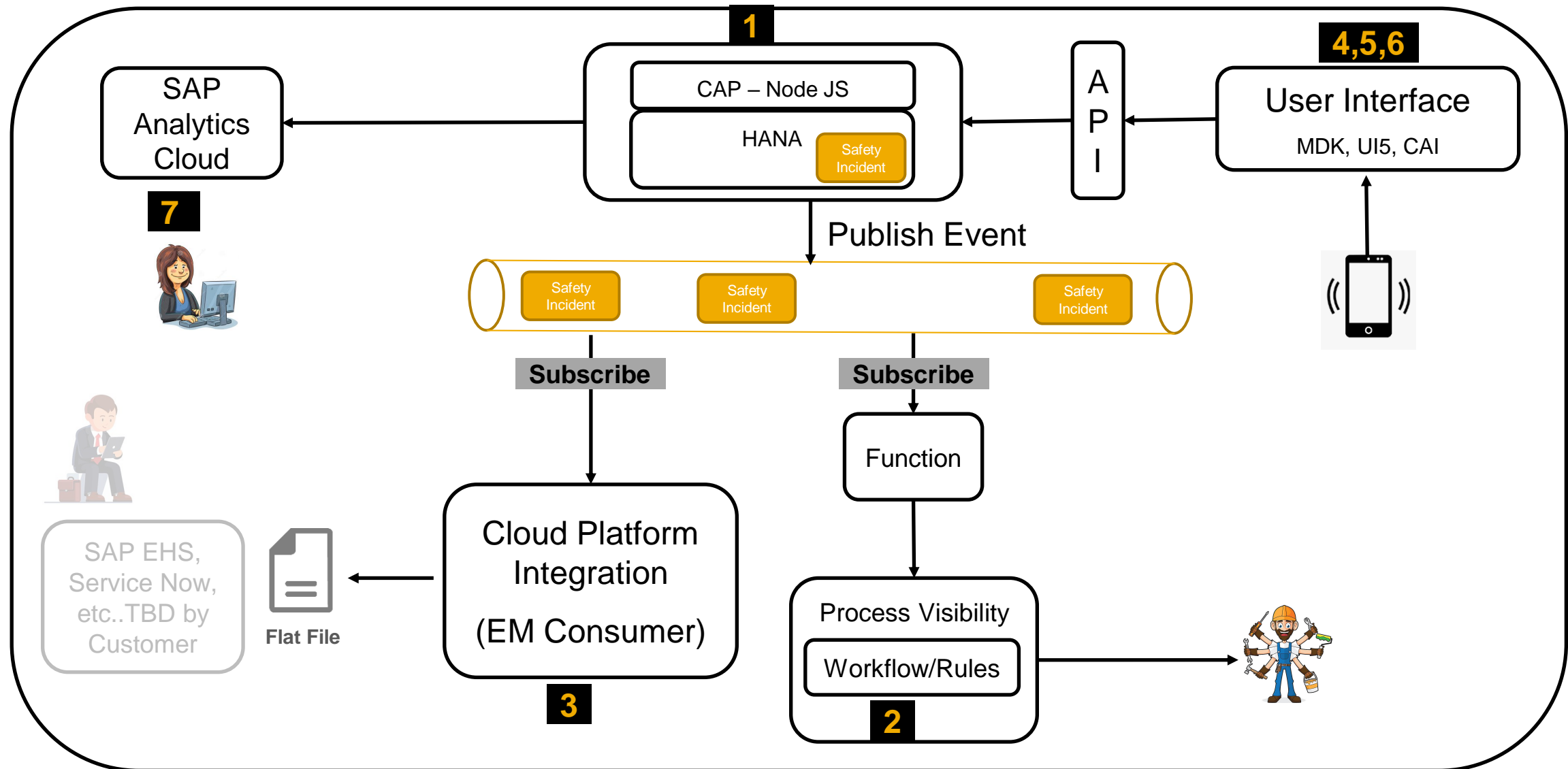
Maintenance supervisor receives incident in his inbox and assigns it to a maintenance technician



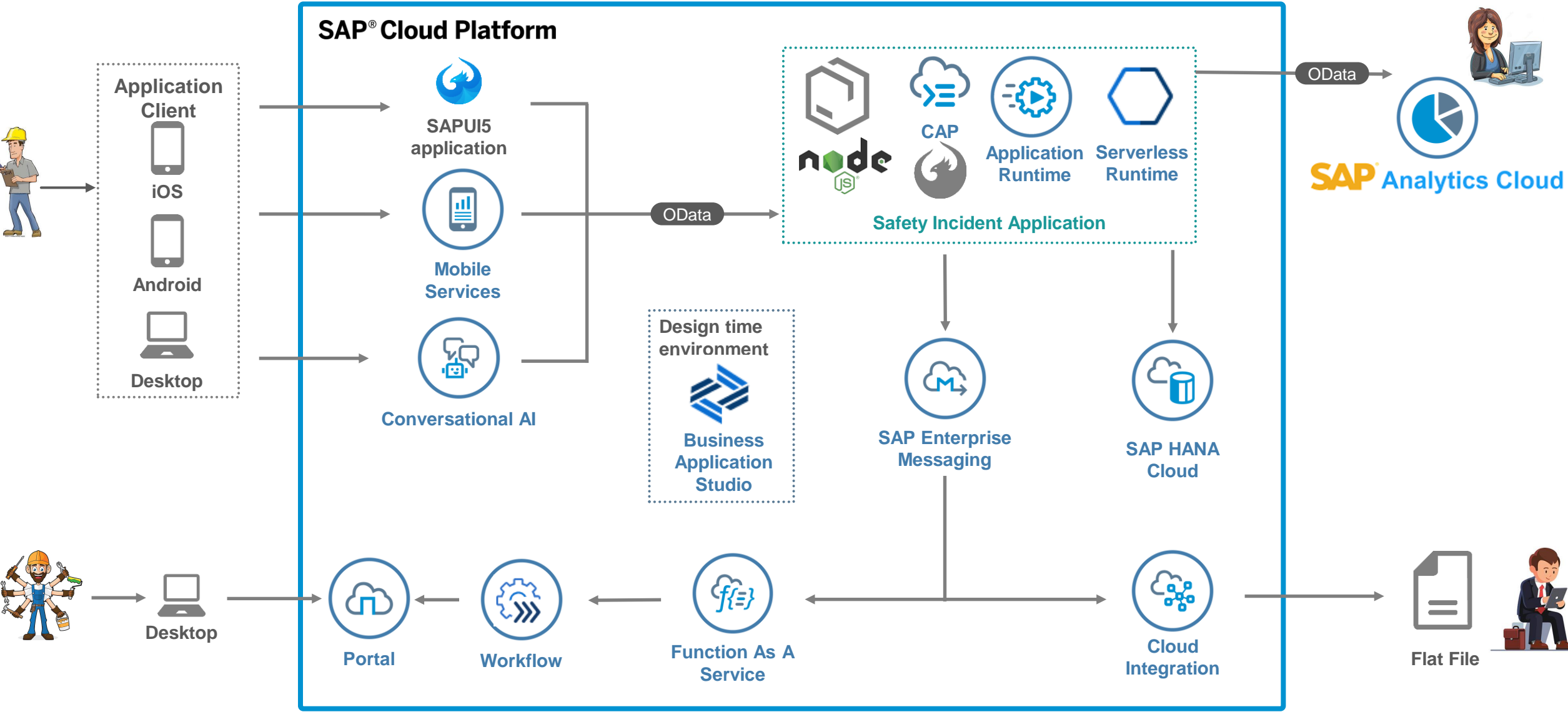
Maintenance manager uses her dashboard to analyze the performance of her group through KPIs



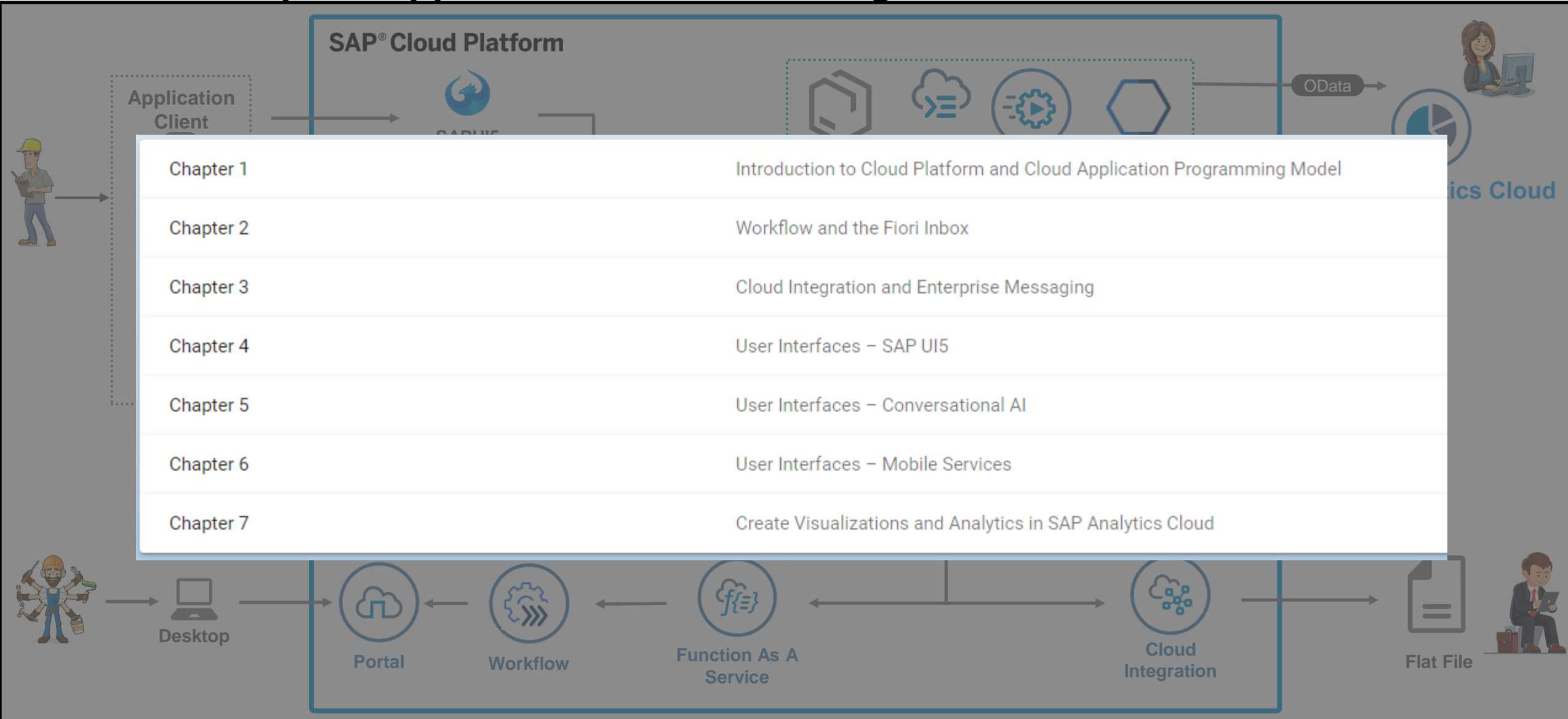
Service Request Application – Architecture And Process Flow



Service Request Application – Solution Diagram



Service Request Application – Solution Diagram



Some Practical Information



SAP Business Technology Platform Technical Academy – Getting Started

- Technical Academy Home Page
- Always start here
- Login with your assigned “P” user id/password
- Access to all exercises and tools is from the home page – one stop shop
- **Recommended:** Use a *Password Manager* or *scratch pad text file* with details like user ID, links, notes, etc.
- **Recommended:** Use the Incognito Mode in Chrome

All Exercises

Cloud Foundry (Platform) User

Overview

Exercises

Platform User

Business Application Studio

Process Integration

Enterprise Messaging

Extension Center

Conversational AI

Mobile Services

Portal

Web IDE

Analytics Cloud

Development Tools

<https://xa-EA2324.cfapps.eu10.hana.ondemand.com>

Select Your Chapter

1

CAP

2

WF

3

CPI

4

UI5

5

CAI

6

Mobile

7

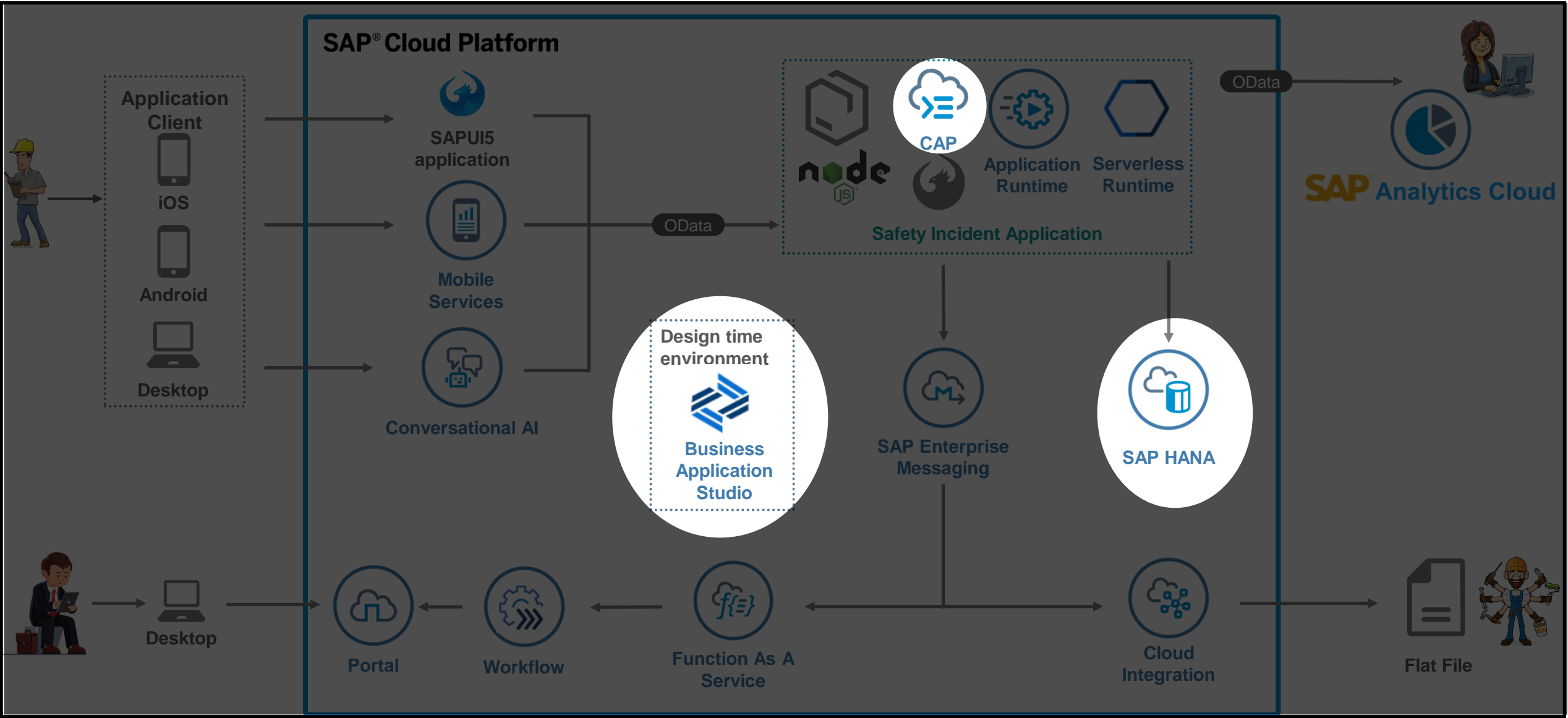
SAC

Chapter 1

Cloud Application Programming Model



Service Request Application – Solution Diagram

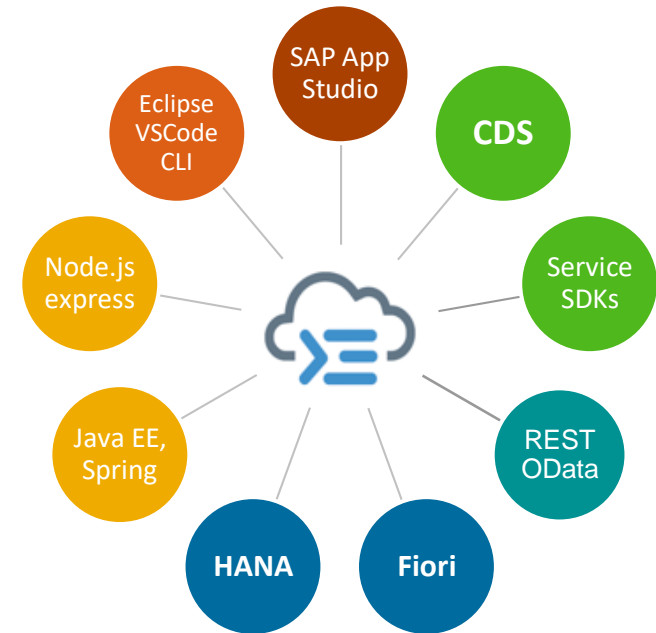


Introduction to The SAP Cloud Application Programming Model (CAP)

*The SAP Cloud Application Programming Model is an **opinionated**, yet **open** framework of tools, languages and libraries to efficiently build enterprise-grade services and applications.*

*It guides developers along a 'golden path' of proven **best practices**, while minimizing boilerplate so they can **focus on their domain** problems at hand.*

*The framework features a mix of broadly adopted **open-source** and **SAP** tools and technologies.*



Exercise 1 (CAP): 5 Chapters

Chapter 1 - **Create your Dev Space**

Chapter 2 - **Setting up BAS**

Chapter 3 - **Creating your first CAP project**

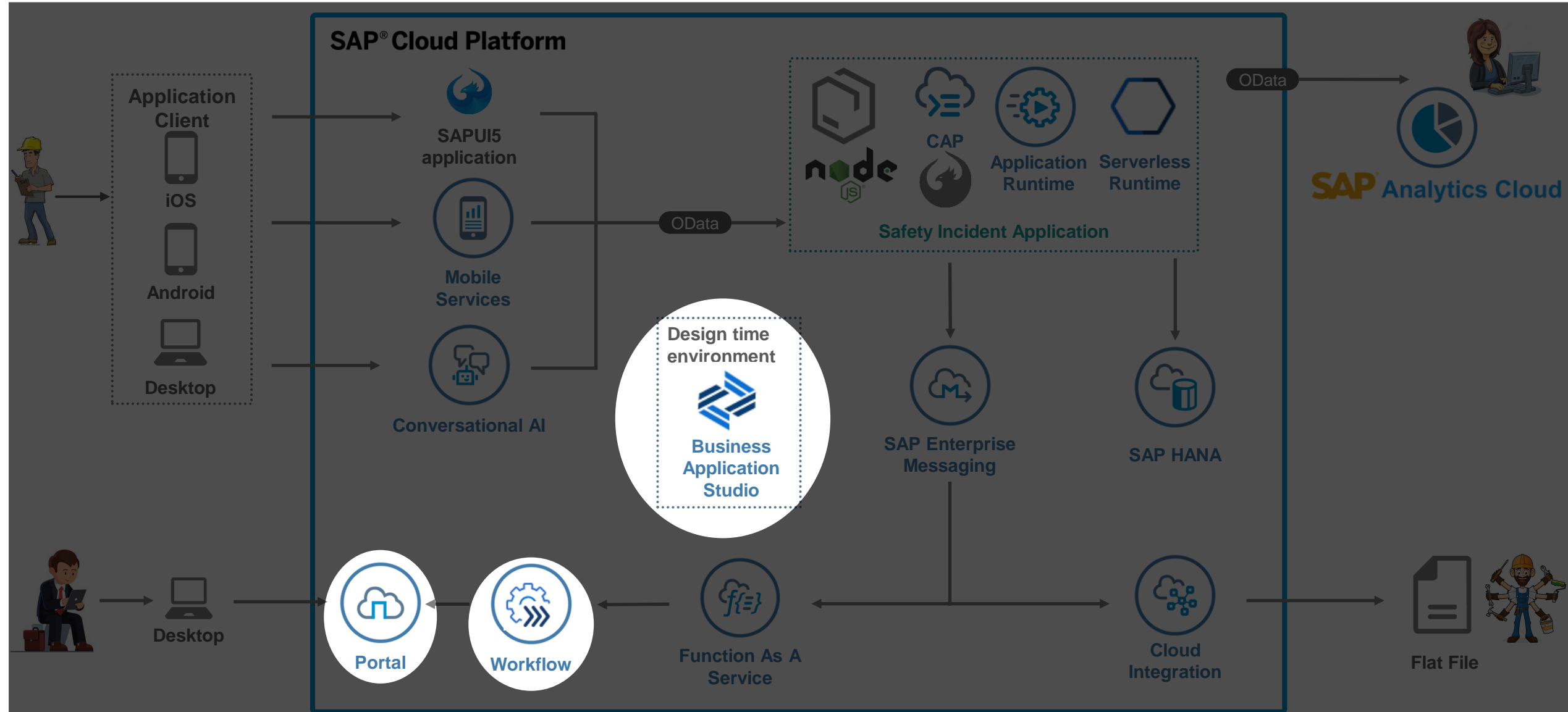
Chapter 4 - **Deploy to Cloud Foundry**

Chapter 2

Workflow and Fiori Inbox



Service Request Application – Solution Diagram



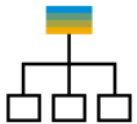
SAP Business Technology Platform Extension Suite: Digital Process

Automation



A Cloud service offering to digitize workflows, automate business processes, manage decision logic and gain end-to-end process visibility

SAP Business Technology Platform Workflow Management



Workflow

Workflow (Low/No-Code)
Manage Process Variants



Decisions

Business Rules
Manage Decisions



Process Visibility

Process Visibility
Live Process
Dashboards



Inbox

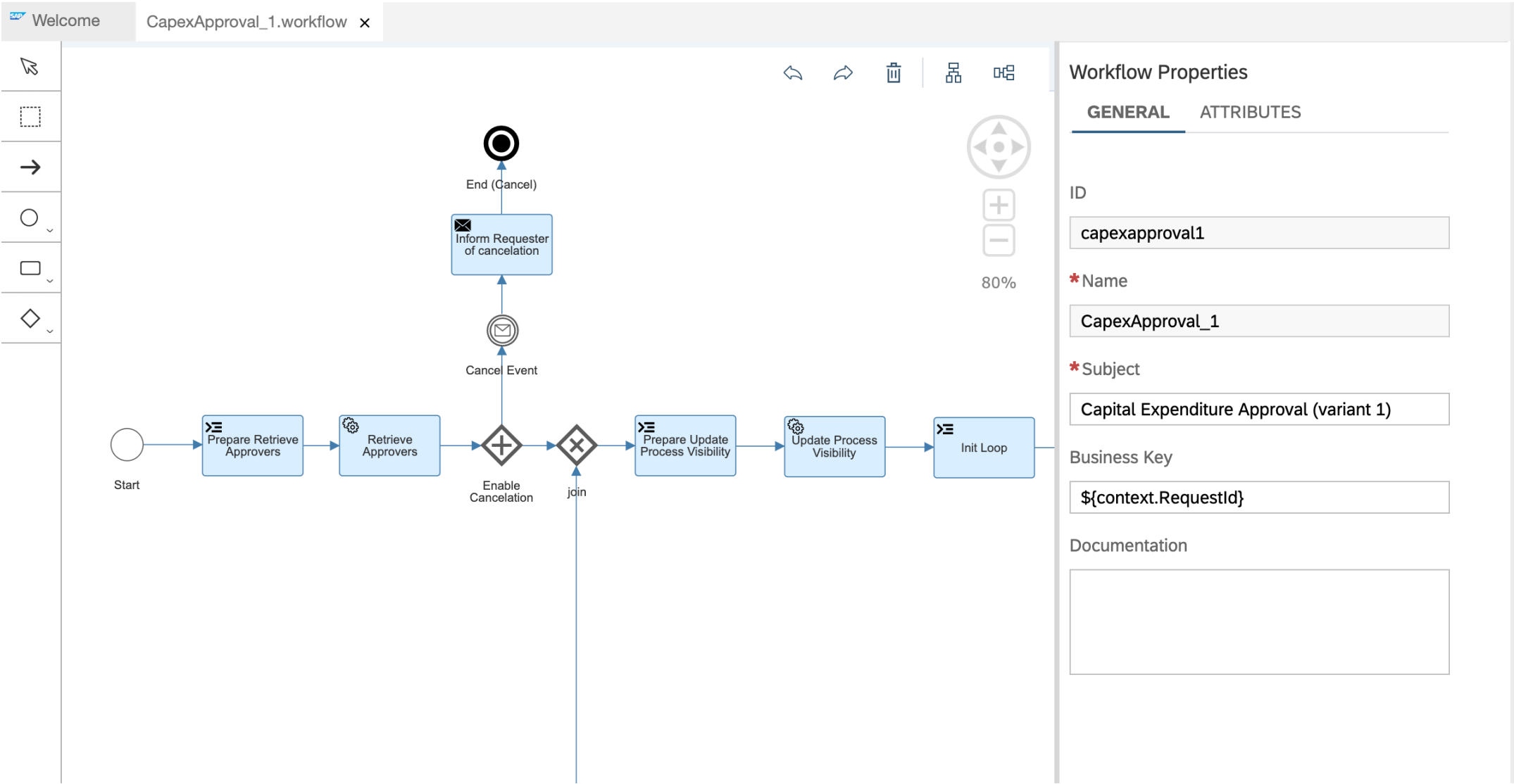
My Inbox /
ONE Inbox



Tightly Integrated with:

SAP Intelligent RPA
SAP Conversational AI

Workflow Editor: Overview



Exercise 2 (Workflow)

Re-use your *existing* **Dev Space**, or create a *new* **Dev Space** (instructions provided)
(Either way, this will reside as a *new* **Project** than your CAP Project within the Dev Space)

Chapter 1 - Import and setup your Workflow project

Chapter 2 - The Safety Incident Workflow

Chapter 3 - Build and Deploy

Chapter 4 - Test the Safety Incident Management Workflow

Let's See it **in Action**



Dietmar Steinbichler

SAP Business Technology Platform Technical Academy – Getting Started

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- **Recommended:** Use the Incognito Mode in Chrome

The screenshot shows the SAP Cloud Platform Technical Academy home page. The header features a cityscape background with the text 'SAP Cloud Platform Technical Academy'. Below the header, there are several sections:

- Overview:** A section with a 'Let's go!' button.
- Exercises:** A section with a 'Let's go!' button, highlighted by a red rectangle. An arrow labeled 'All Exercises' points to this section.
- Platform User:** A section with a 'Let's go!' button. An arrow labeled 'Cloud Foundry (Platform) User' points to this section.
- Business Application Studio:** A section with a 'Let's go!' button.
- Process Integration:** A section with a 'Let's go!' button.
- Enterprise Messaging:** A section with a 'Let's go!' button.
- Extension Center:** A section with a 'Let's go!' button.
- Conversational AI:** A section with a 'Let's go!' button.
- Mobile Services:** A section with a 'Let's go!' button.
- Portal:** A section with a 'Let's go!' button.
- Web IDE:** A section with a 'Let's go!' button.
- Analytics Cloud:** A section with a 'Let's go!' button.

An arrow labeled 'Development Tools' points to the bottom right corner of the page, specifically towards the 'Web IDE' and 'Analytics Cloud' sections.



HANDS-ON

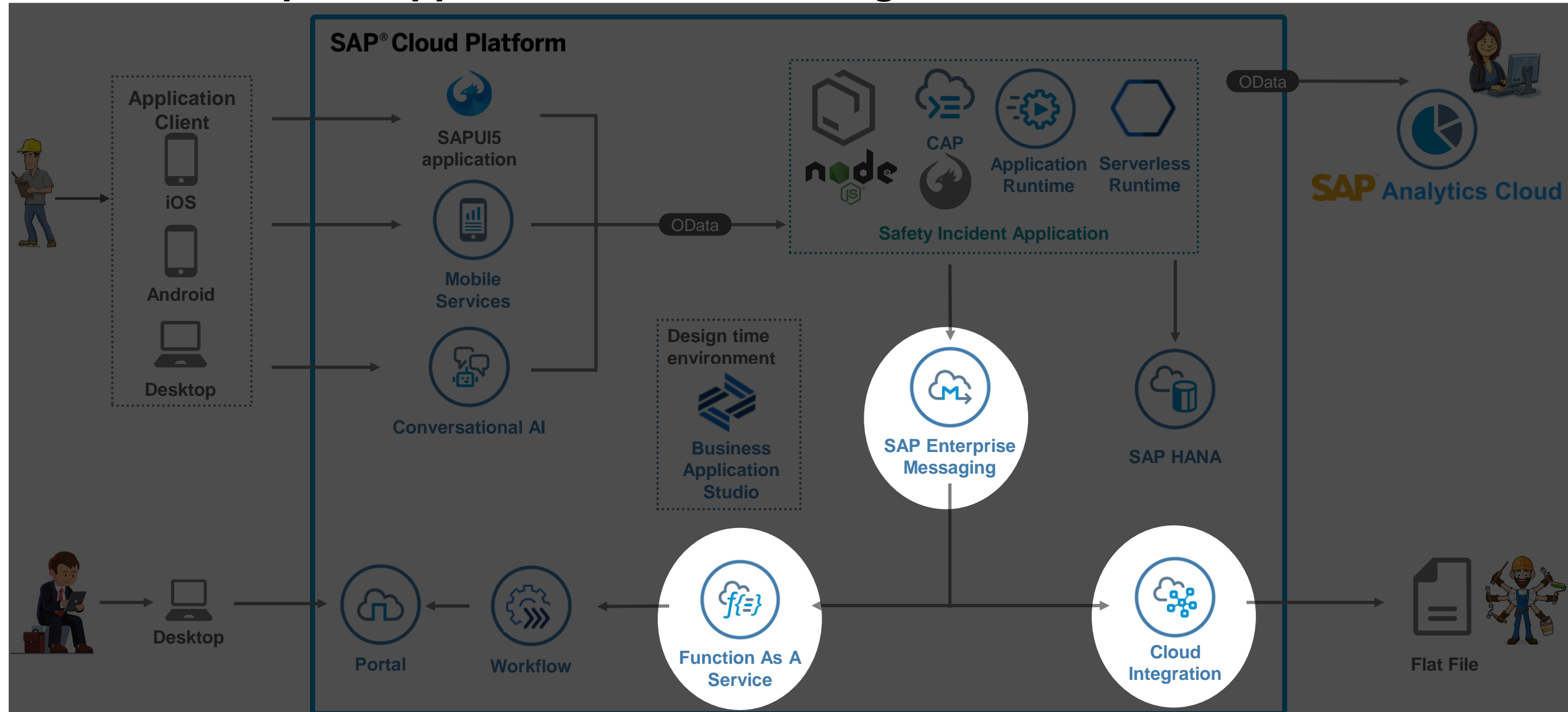
Time!

A person wearing a red jacket and a beanie is sitting on the ground in a grassy field, looking up at a starry night sky. The Milky Way galaxy is visible in the sky, and the horizon shows a faint orange glow from the setting or rising sun. The text "Chapter 3" is in white, and "Cloud Platform Integration & Enterprise Messaging" is in yellow.

Chapter 3

Cloud Platform Integration & Enterprise Messaging

Service Request Application – Solution Diagram

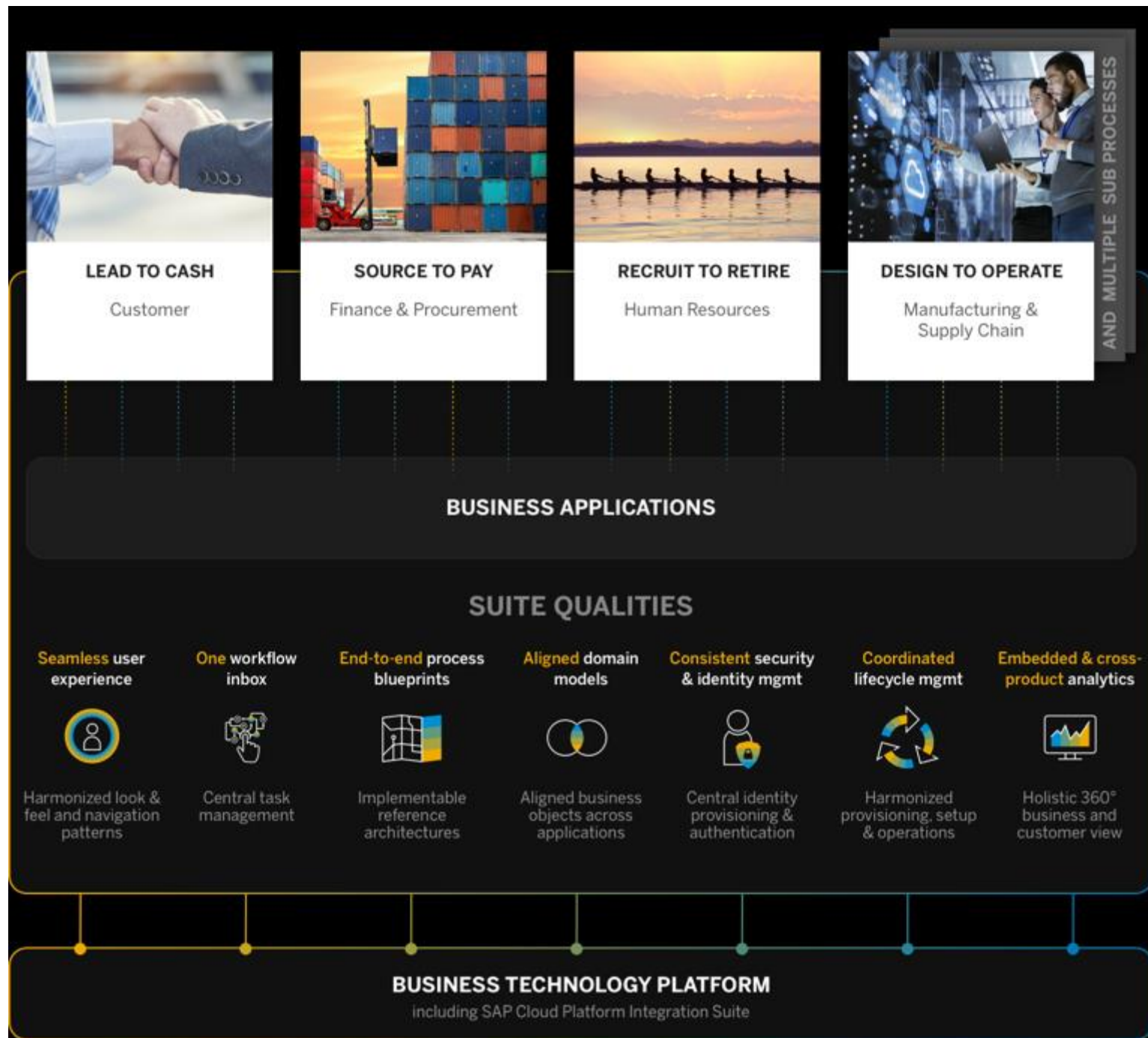


Intelligent Enterprises are Integrated Enterprises



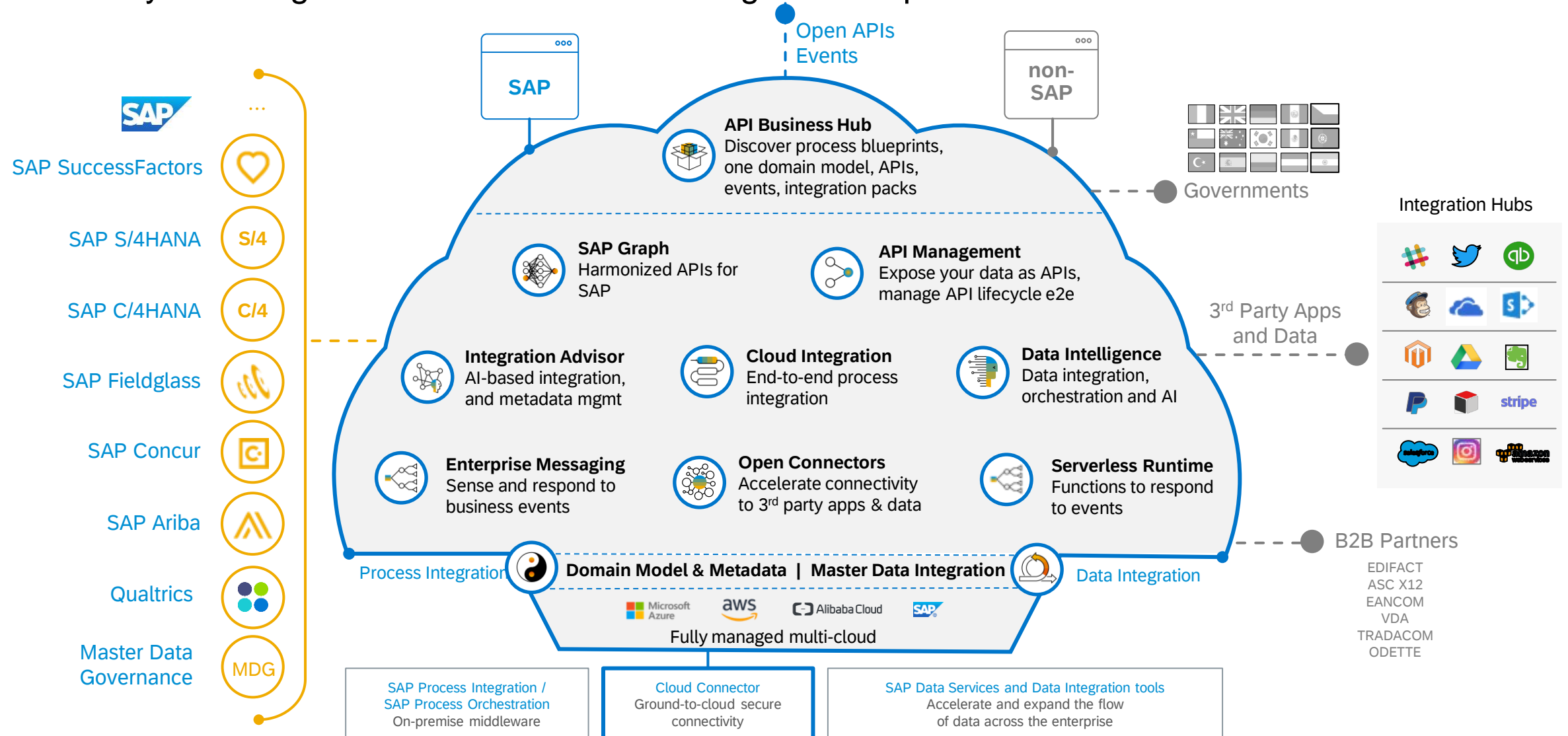
Christian Klein
CEO, SAP

Integration Strategy [Whitepaper](#)
with roadmap from SAP's CEO

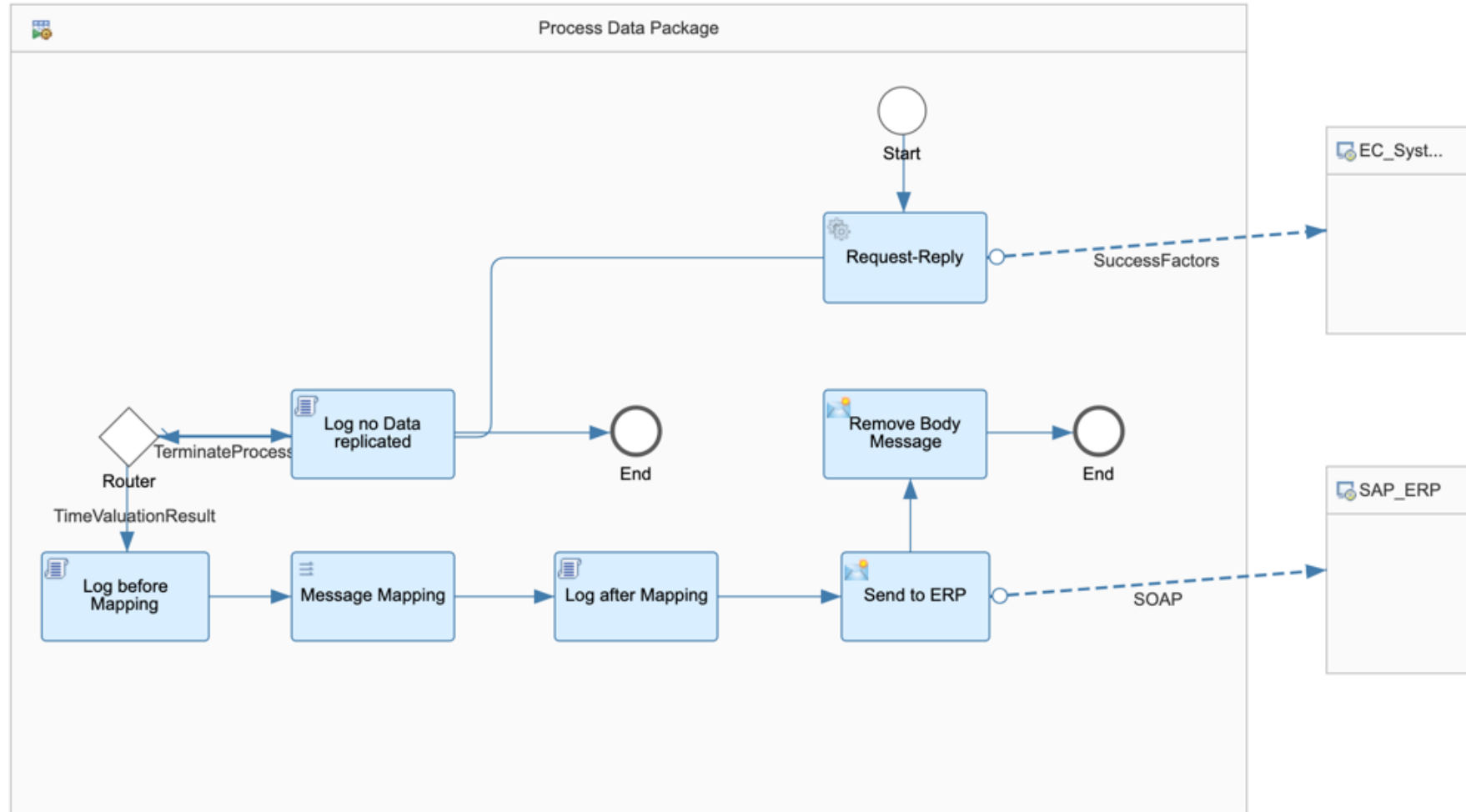


SAP Business Technology Platform Integration Suite

SAP's Hybrid Integration Platform for the Intelligent Enterprise



What is SAP Business Technology Platform Process Integration?



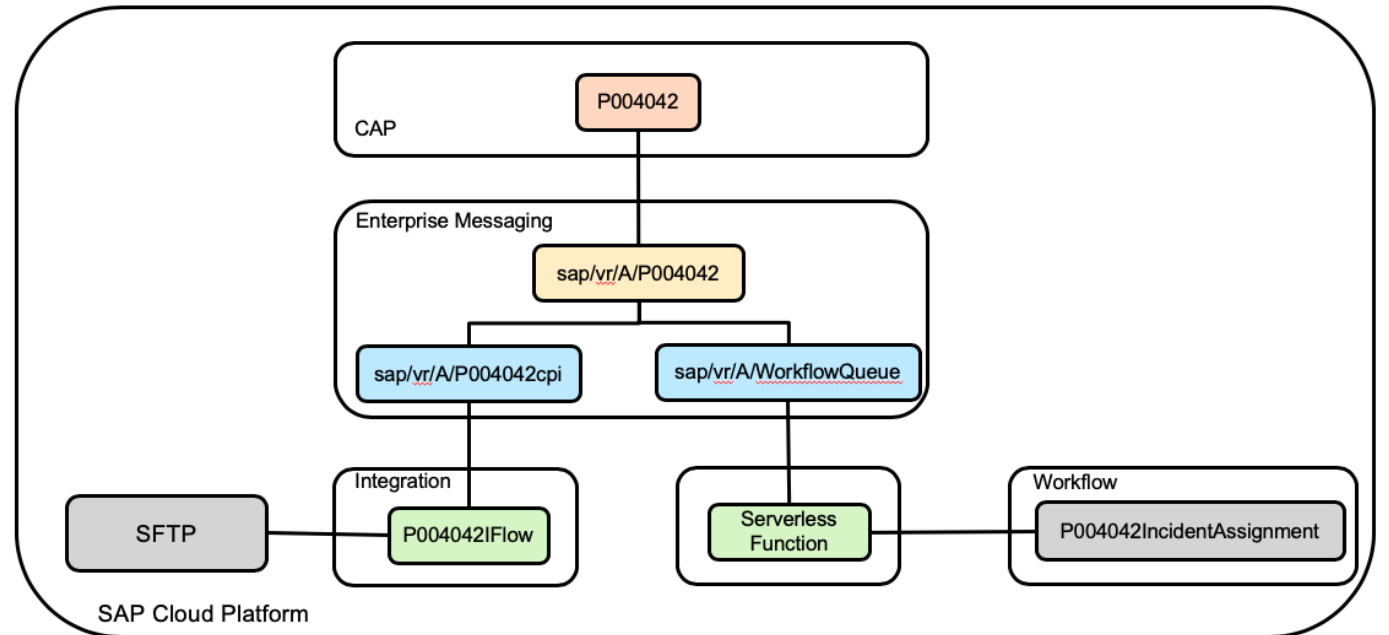
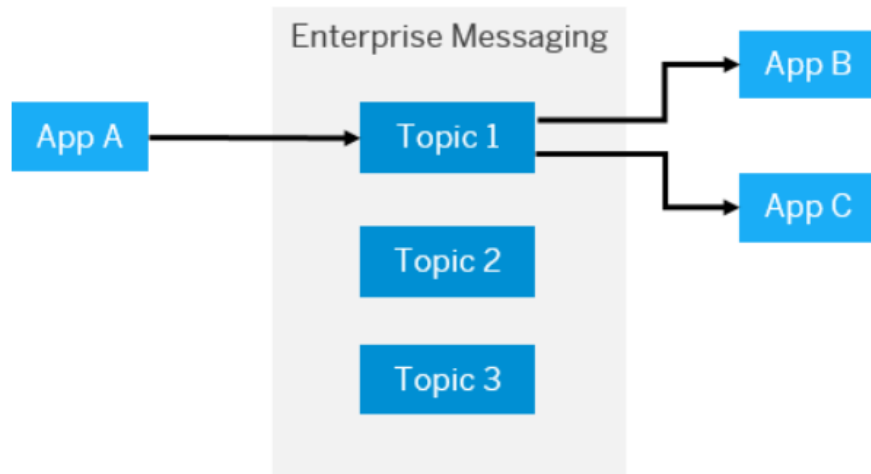
What is SAP Enterprise Messaging?



What is SAP Enterprise Messaging?

Before you proceed

For a better understanding of this exercise goal it is highly recommended to read the following [document](#) first.



Create an Incident using a prebuilt SAPUI5 Application

SAP Display and create incidents in SAP HANA

Incident Report

Safety Incidents

Search

Incident

My computer software: New Workflow will Workflow issue

Car Glass Window broke

Flat Tire Flat tire on car

Car Glass broke Car Glass broke

New Incident MuY computer computer broke My computer i

My laptop is hardware: Nev

User Locked I forgot my password

Rock hit window Glass is broken

< Create Incident

Save

Title: *

Description: *

Category:

Priority:

Attachment:

Screen is Frozen for

Trouble when surf

Software

Low

```
{
  "ID": "e7308e33-6c2e-46c2-9d70-ba231dcff5ec",
  "createdAt": "2020-05-12T01:19:14.243Z",
  "createdBy": "anonymous",
  "modifiedAt": "2020-05-12T01:28:46.177Z",
  "modifiedBy": "anonymous",
  "title": "Screen is Frozen for P004842",
  "description": "Trouble when surfing the Internet ",
  "incidentResolutionDate": null,
  "category_code": "software",
  "priority_code": "low",
  "incidentStatus_code": "new",
  "assignedIndividual_ID": "067460c5-196c-4783-9563-ed797399da8"
},
```

SAP's Digital Assistant

Components In Play & Process Flow – *New Incident Creation*

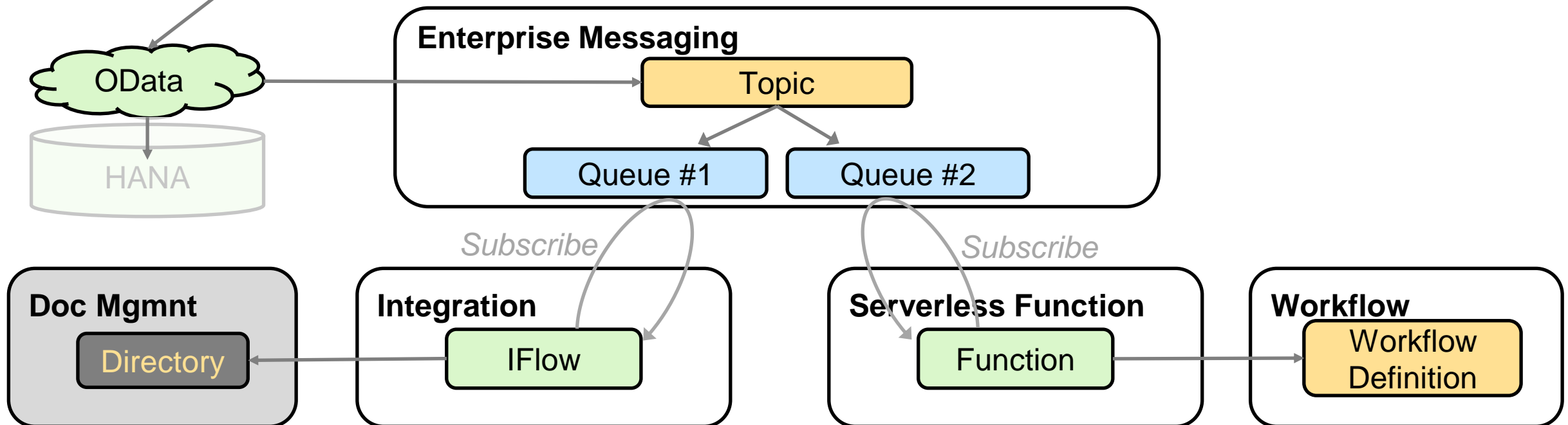
SAP Display and create incidents in SAP HANA

Incident Report

Safety Incidents

Search

Incident	Priority
PXXXXX Screen is Frozen for user - CAI software: New incident created	High



Exercise 3 (Enterprise Messaging & CPI): 5 x Chapters

Chapter 1 - Integrating the Safety Incident Components

Chapter 2 - Create your iFlow

Chapter 3 - Connect your iFlow

Chapter 4 - Build your iFlow

Chapter 5 - Testing the Safety Incident Integration

Let's See it **in Action**



Kurt Kristiansen

Messaging & CPI

Chapter 1

Chapter 1 - Integrating the Safety Incident Components

- **Enterprise Messaging Service**
 - **Topics, Queues** and *testing*
- **Serverless Function**
- Components of a Serverless Function
 - Triggers (i.e. the EM Queue)
 - Endpoints (i.e. the URL of the Workflow)
 - Incoming (i.e. the URI of the EM Queue)
 - Code (Node.js)
- Serverless Function **logs**

Messaging & CPI

Chapters 2 & 3

Chapter 2 - Create your iFlow

- Access the **CPI Service**
 - New *Package* >> New *Artifact (Information Flow)*

Chapter 3 - Connect your iFlow

- **Sender:** “EM” (AMQP/WebSocket)
- **Receiver:** “SAPDocMmgnt” (http)
- **OAuth2 Client Credentials**
 - *clientid* and *clientsecret*

Messaging & CPI

Chapter 4

Chapter 4 - Build your iFlow

- Enriching the iFlow
 - JSON to XML *It's all XML!*
 - Content Modifier
 - Add Message Header (XPath) *XPath*
 - ***IncidentID*** := XPath(***//ID***)
 - Receiver #2: “**CAPservice**” (HTTP) (via **Request Reply**)
 - [https://setechnicalacademyxaEA1711cf.eu10.cfapps.eu10.hana.ondemand.com/incident/SafetyIncidents\({header.IncidentID}\)](https://setechnicalacademyxaEA1711cf.eu10.cfapps.eu10.hana.ondemand.com/incident/SafetyIncidents({header.IncidentID})) *OData*
- Deploy
- Operations View >> Manage Integration Content \ All >> Status

Messaging & CPI

Chapter 5

Chapter 5 - Testing the Safety Incident Integration

- **Test the workflow**
 - Add a new Incident
 - must prefix the Title with ****PXXXXXX**** as indicated in the image. Where PXXXXXX is your user ID.
 - You must add the **, before and after your user ID
 - This is important since this will be used by the serverless function to create your workflow.
- **Check the Fiori Inbox**
- **Check the Serverless Function Logs**
- **Check if the Integration Flow was triggered**



HANDS-ON

Time!

SAP Business Technology Platform Technical Academy – Getting Started

- Technical Academy Home Page
- Always start here:
- Login with your assigned “P” user id/password
- Initial Password is: **Initial1** for the P-user in the landing page
- P-user and Platform user

All Exercises

Cloud Foundry (Platform) User

Overview

Exercises

Platform User

Business Application Studio

Process Integration

Enterprise Messaging

Extension Center

Conversational AI

Mobile Services

Portal

Web IDE

Analytics Cloud

Development Tools

Messaging & CPI – last week

Integrating the Safety Incident Components

- **Enterprise Messaging Service**
 - **Topics, Queues and *testing***
- **Serverless Function**

Creating folder in SAP Document Management

Create your SAP Cloud Integration iFlow

Testing the integration

Some of you experienced that the integration flow failed when you deployed them. We have found the issue. In the SAP Enterprise Messaging service it was configured a limitation of 10 connections to each message client. In most customer workshops this is sufficient. But in our case we had obviously more connections than 10. Now we have increased the number of connections and the iFlows have successfully started. We are sorry for this.

The screenshot displays the SAP Integration Suite Cloud Integration interface. On the left, a table lists 19 integration flows, all with a status of 'Started'. The top flow is iFlowP015192. On the right, the details for iFlowP015192 are shown. It includes deployment information (Deployed On: Jan 31, 2021, 08:13:41; ID: iFlowP015192; Package: package_P015192; Version: 1.0.0) and tabs for Endpoints, Status Details, Artifact Details, and Log Configuration. The Status Details tab is active, showing a green message: 'The Integration Flow is deployed successfully.' Below this, the Polling Information section shows the Adapter URI and Consumption Status (Successful). The Artifact Details section has links for 'Monitor Message Processing' and 'View Integration Flow'.

Name	Status
iFlowP015192 Integration Flow	Started
iFlowP015211 Integration Flow	Started
iFlowP015158 Integration Flow	Started
iFlowP015229 Integration Flow	Started
iFlowP015166 Integration Flow	Started
iFlowP015232 Integration Flow	Started
iFlowP015209 Integration Flow	Started
iFlowP015164 Integration Flow	Started
iFlowP015181 Integration Flow	Started
iFlowP015182 Integration Flow	Started

iFlowP015192 [Restart](#) [Undeploy](#) [Download](#)

Deployed On: Jan 31, 2021, 08:13:41 ID: iFlowP015192 Package: package_P015192
Deployed By: P015192 Version: 1.0.0

[Endpoints](#) [Status Details](#) [Artifact Details](#) [Log Configuration](#)

There are no endpoints configured.

Status Details

The Integration Flow is deployed successfully.

Polling Information

Adapter URI: Continuous Consumption
amqpws://enterprise-messaging-messaging-gateway.cfapps.eu10.hana.ondemand.com:443/protocols/amqp10ws/queue:sap/vr/A/P015192cpi
Consumption Status: Successful

Artifact Details

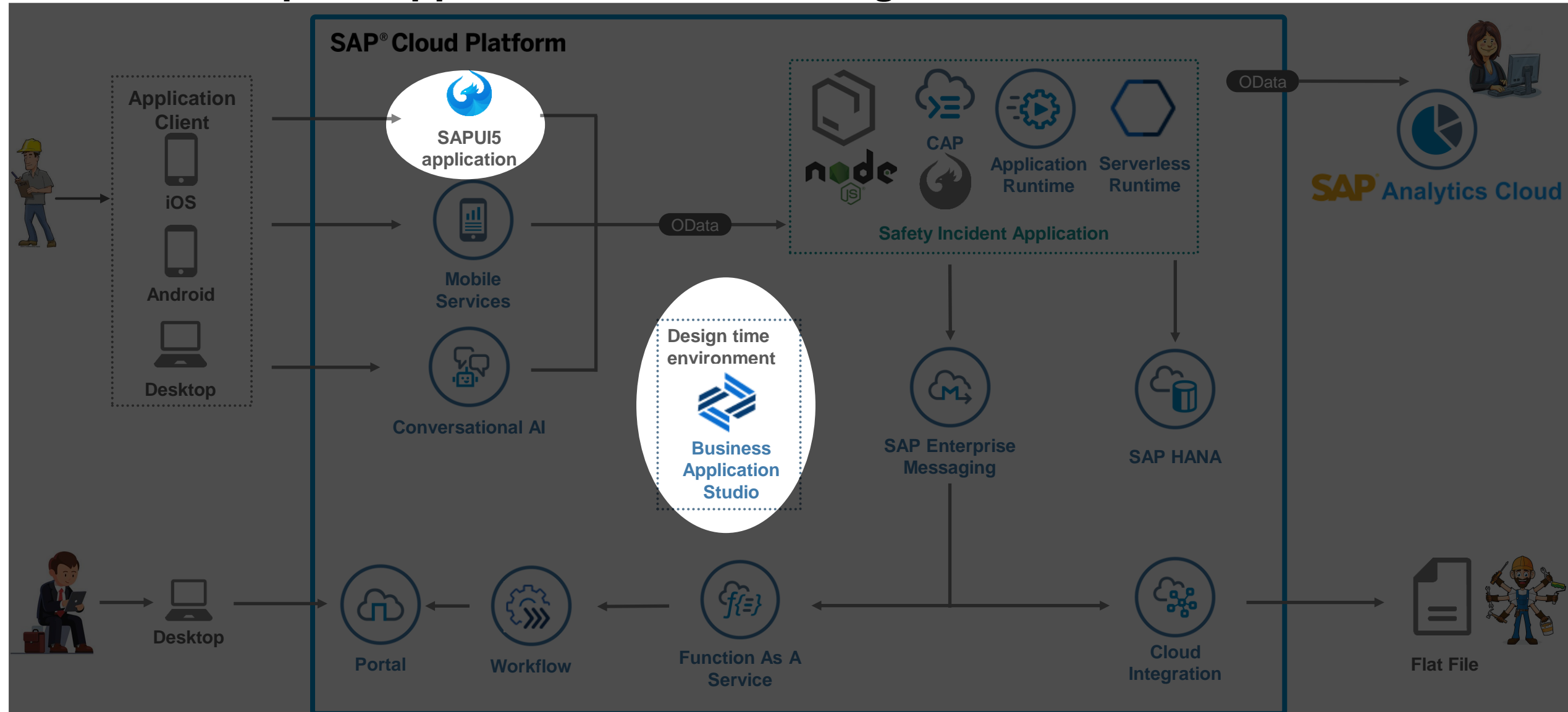
[Monitor Message Processing](#)
[View Integration Flow](#)

Chapter 4

User Interfaces: SAP UI5



Service Request Application – Solution Diagram



The Evolution of SAP Fiori



SAP Fiori
2013

**Casual User
Self Services**

**SAP
Fiori 2.0**
2016

Power User

**Conversational
AI**

**Mobile
iOS & Android**

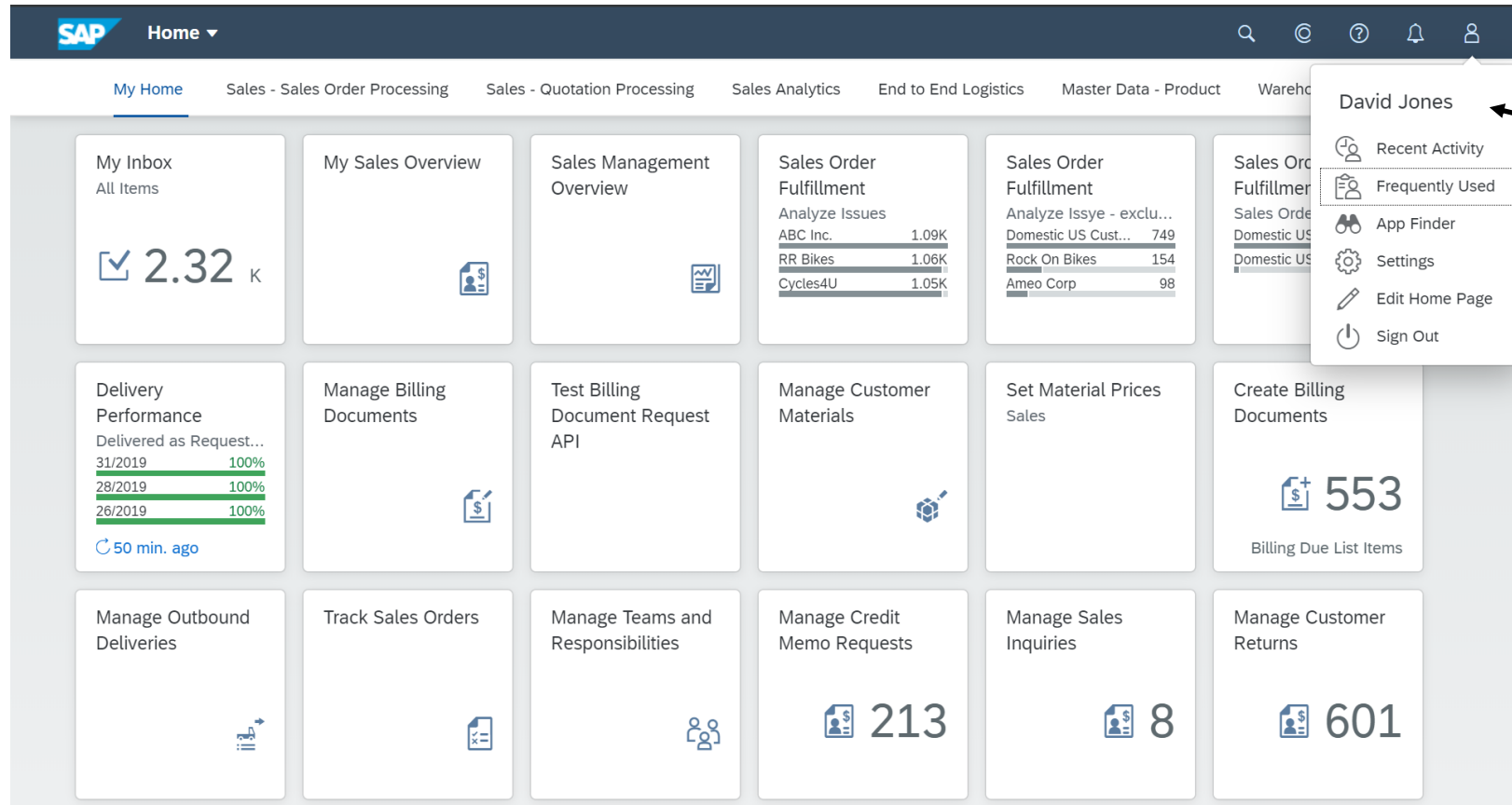
**SAP
Fiori 3**

**Consistent
Intelligent
Intuitive**

This is the current state of planning and may be changed by SAP at any time without notice.

Consistency

SAP Fiori 3 – Launchpad bringing all solutions together



For the sake of consistency across products, the SAP Fiori 2.0 Viewport is replaced by drop-down lists

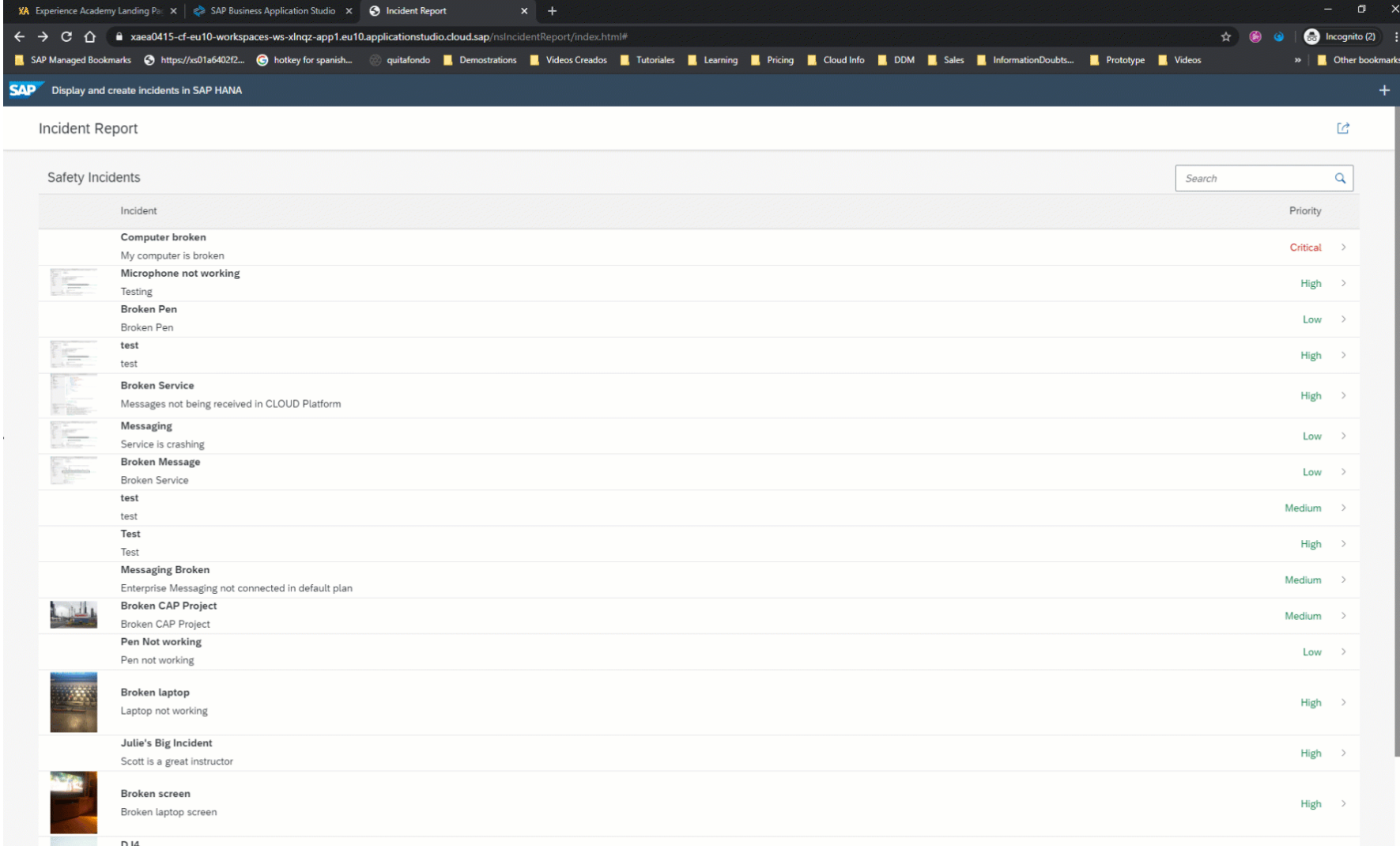
Example shows a pre-view of the Me-area in SAP S/4HANA

Exercise 4 (SAPUI5): 2 x Chapters

Chapter 1 - Create a new application from a template

















Chapter 2 - Modify your SAPUI5 Application

Cleaned Up Final UI



The screenshot shows a web browser window with the SAP Incident Report interface. The browser's address bar displays the URL: `xaea0415-cf-eu10-workspaces-ws-xlnqz-app1.eu10.applicationstudio.cloud.sap/insincidentReport/index.html#`. The browser's bookmark bar includes links to SAP Managed Bookmarks, a hotkey for Spanish, and various SAP resources like Demonstrations, Videos, and Tutorials. The SAP logo and the text "Display and create incidents in SAP HANA" are visible in the top navigation bar.

The main content area is titled "Incident Report" and features a "Safety Incidents" section. A search bar is located in the top right corner of this section. Below the search bar is a table listing various incidents, each with a thumbnail image, a title, a description, and a priority level. The table is sorted by priority, with "Critical" incidents at the top.

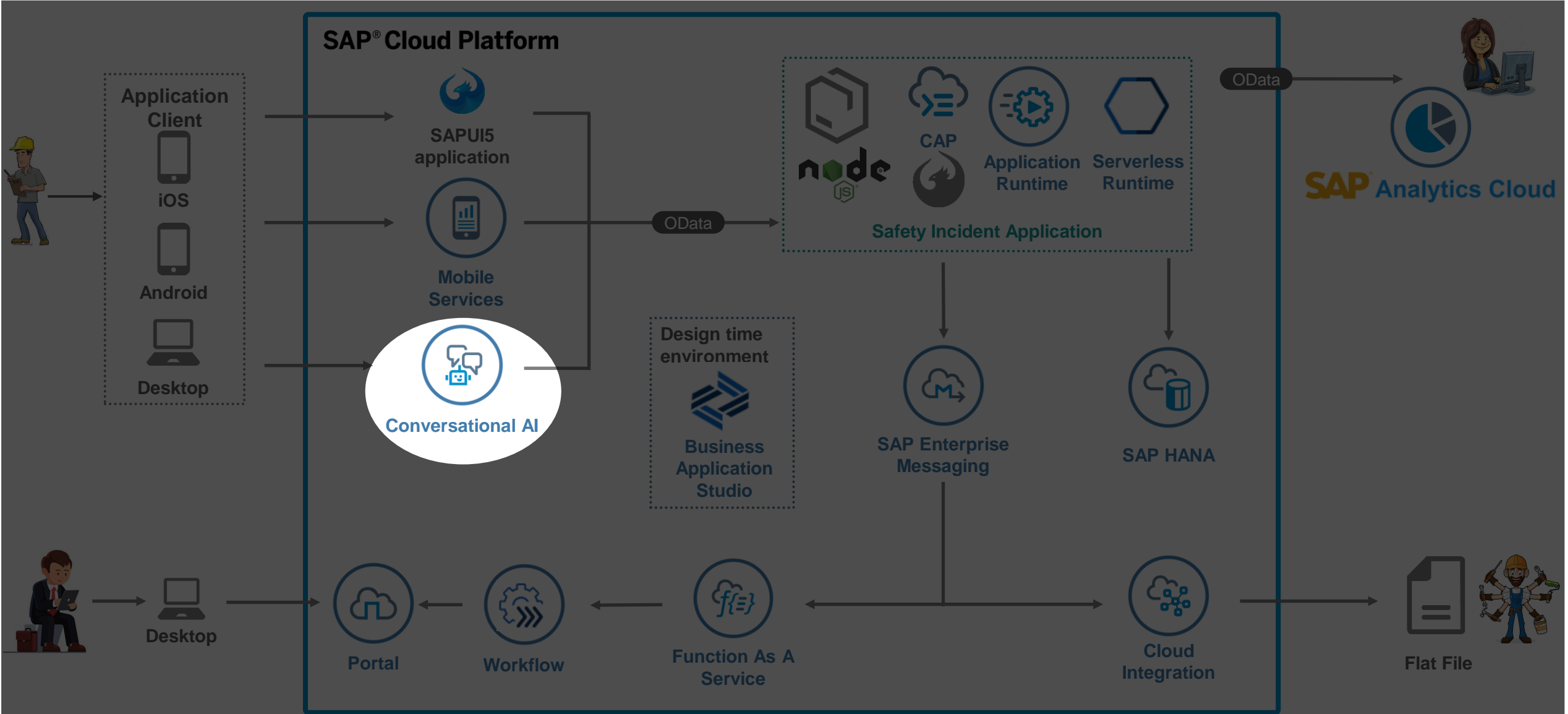
Incident	Priority
 Computer broken My computer is broken	Critical >
 Microphone not working Testing	High >
 Broken Pen Broken Pen	Low >
 test test	High >
 Broken Service Messages not being received in CLOUD Platform	High >
 Messaging Service is crashing	Low >
 Broken Message Broken Service	Low >
 test test	Medium >
 Test Test	High >
 Messaging Broken Enterprise Messaging not connected in default plan	Medium >
 Broken CAP Project Broken CAP Project	Medium >
 Pen Not working Pen not working	Low >
 Broken laptop Laptop not working	High >
 Julie's Big Incident Scott is a great instructor	High >
 Broken screen Broken laptop screen	High >
 DJ4	

Chapter 5

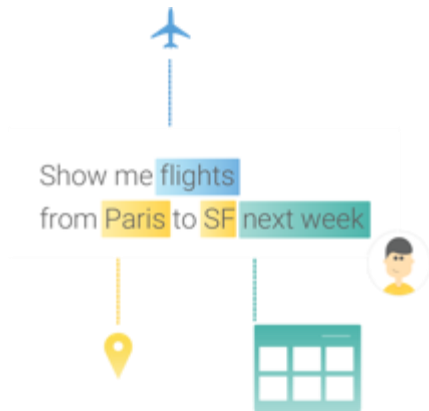
User Interfaces: SAP Conversational AI



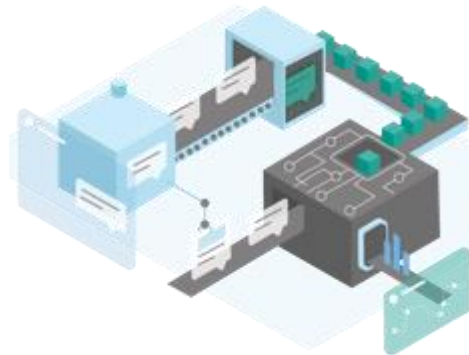
Service Request Application – Solution Diagram



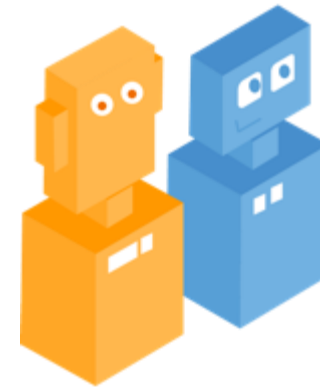
We provide a **platform** that automates conversations



A world-class NLP
and NLU API

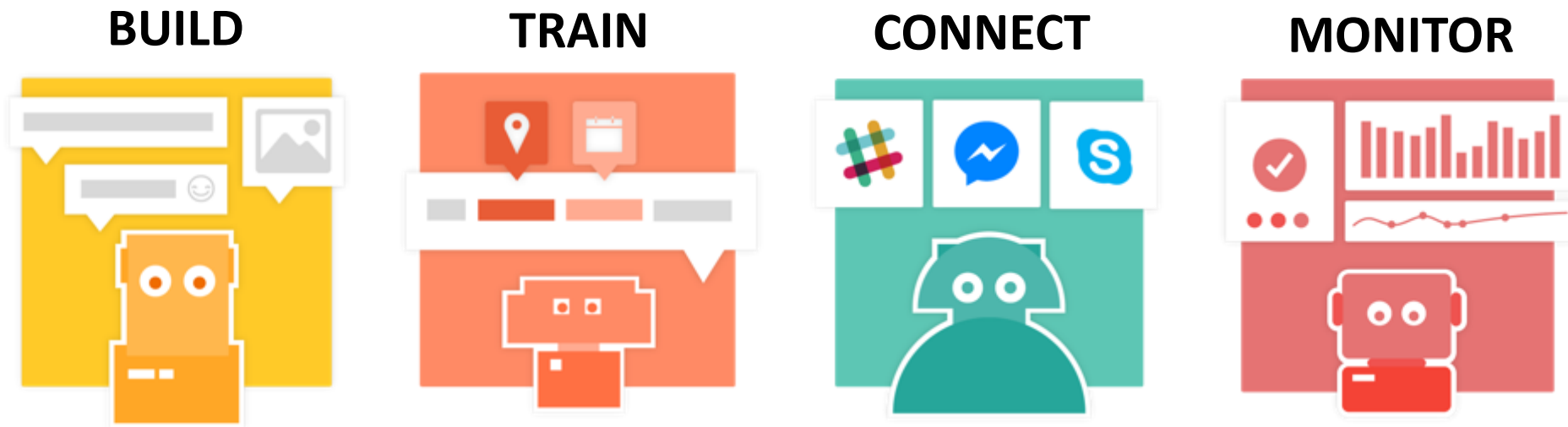


An end-to-end bot building
collaborative platform



Automated customer service
solutions by industry

We provide **integrated tools** for all steps of bot building



Exercise 5 (Chatbots!): 3 x Chapters

Chapter 1 - Creating the basis for a chat bot

Chapter 2 - Enriching the chat bot with skills the basics for a chat bot

Chapter 3 - Testing and integrating your chat bot

Let's See it **in Action**



Dietmar Steinbichler



HANDS-ON

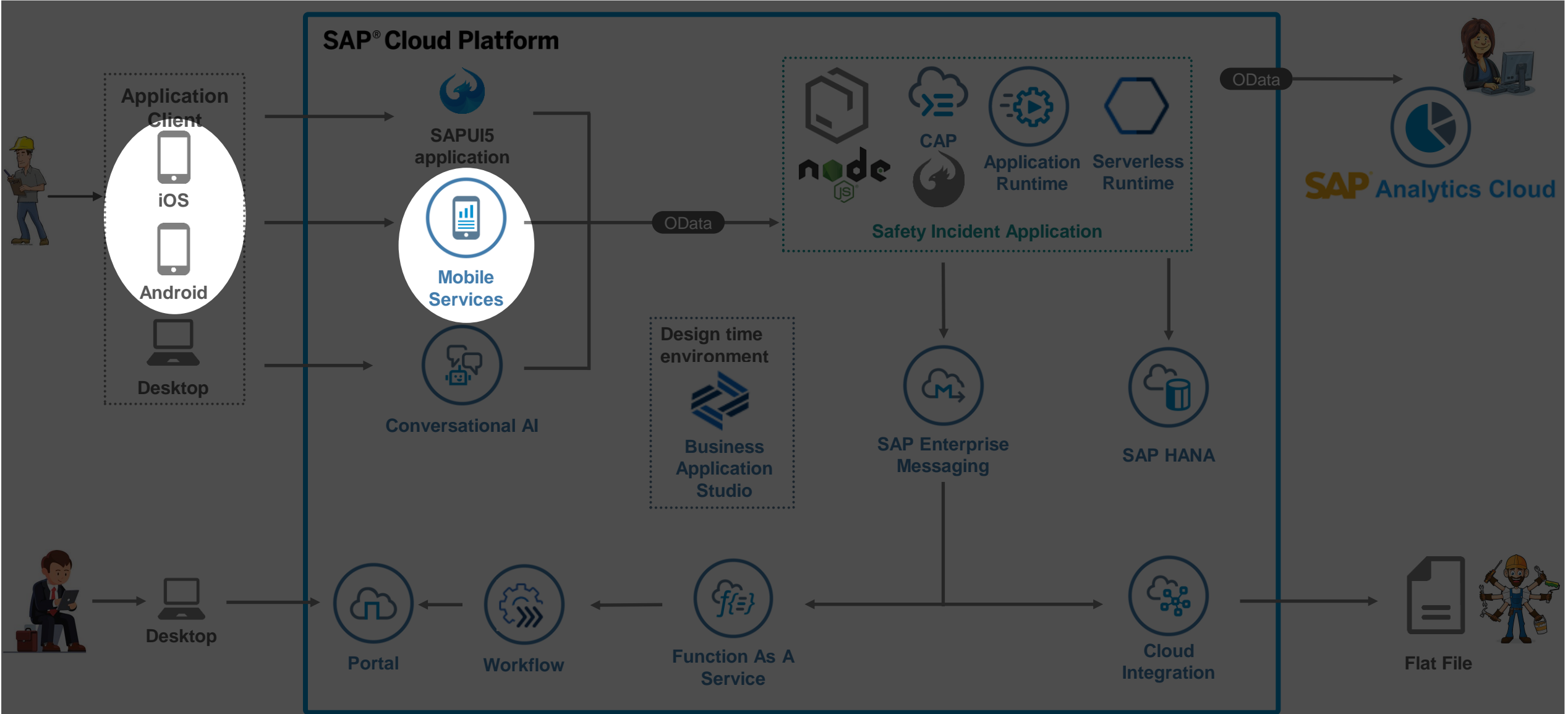
Time!

Chapter 6

User Interfaces: Mobile



Service Request Application – Solution Diagram



SAP Business Technology Platform Mobile Services

Feature Overview



SAP Business Technology Platform Mobile Services

Server Features	Push Notifications	Enterprise-grade Offline Sync (OData)	Application Lifecycle	Enterprise Authentication	Mobile Traffic Management
	Cloud Build Service for CI	Online (Caching) (REST, SOAP, OData, etc.)	Mobile Setting Exchange	Multi-Factor Authentication	Network Traces
	Mobile Back-End Tools	App Lab for CI	Discovery Service	Enterprise-grade Encryption	Remote Logging
	Mobile Transaction Bridge	Sample OData Service OData (v2, v4)	Storage Service	Enterprise App Management	Usage Analytics
	Integration Services support	Mobile Card Kit	Client Resources Management	GDPR & EUDP access	Mobile Analytics
App Services			Security		Supportability

SAP Business Technology Platform Mobile Services

Native App Development – SAP Business Technology Platform SDK for iOS



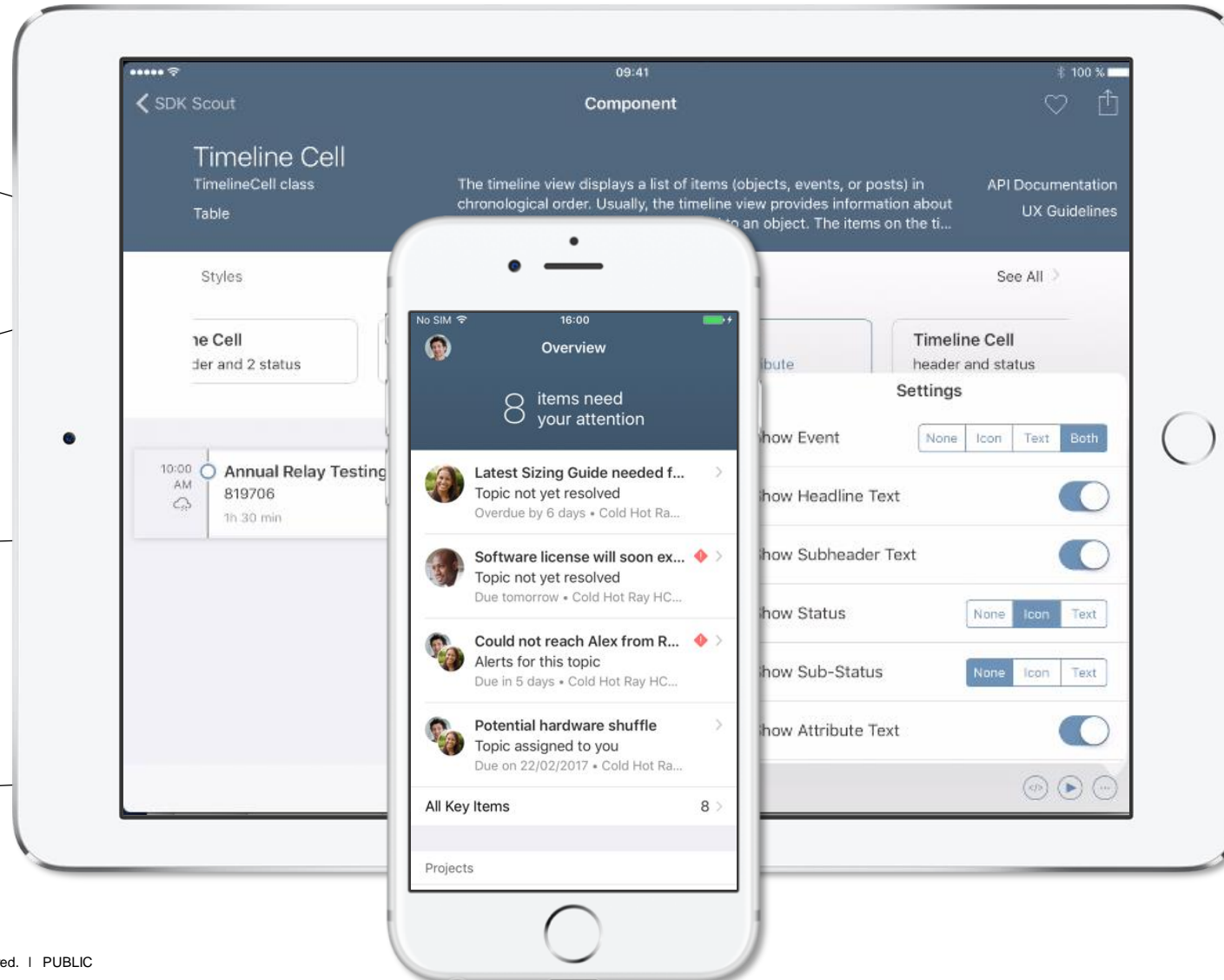
Benefits

Empower designers and developers with tools to quickly and efficiently build iOS apps for the enterprise

Enable apps with native iOS look and feel high performance

Accelerate development with UI controls, frameworks and tools

Innovate by taking advantage of rich iOS device features like ARKit, CoreML, location services and notifications



Capabilities

Swift-based **SDK for iOS** incl. UI controls, frameworks for data access, security, supportability

SAP Fiori for iOS design language

SDK Assistant automatically generates fully running app scaffolding by reading metadata from backend enterprise APIs

SAP Fiori Mentor app generates customized UI code snippets for Fiori controls

SAP Business Technology Platform Mobile Services

Native App Development – SAP Business Technology Platform SDK for Android



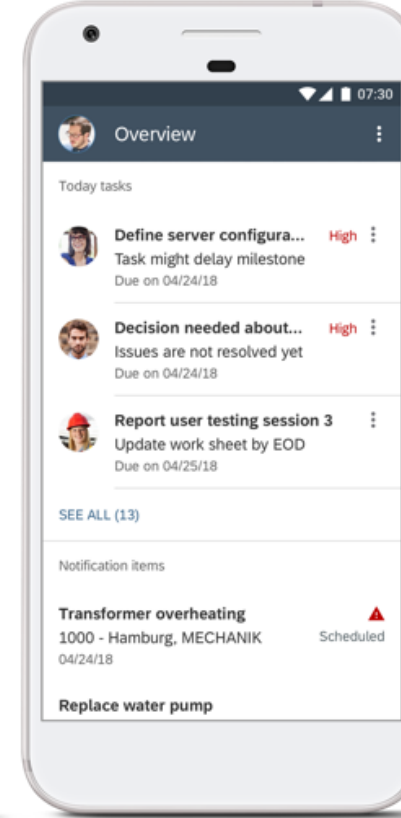
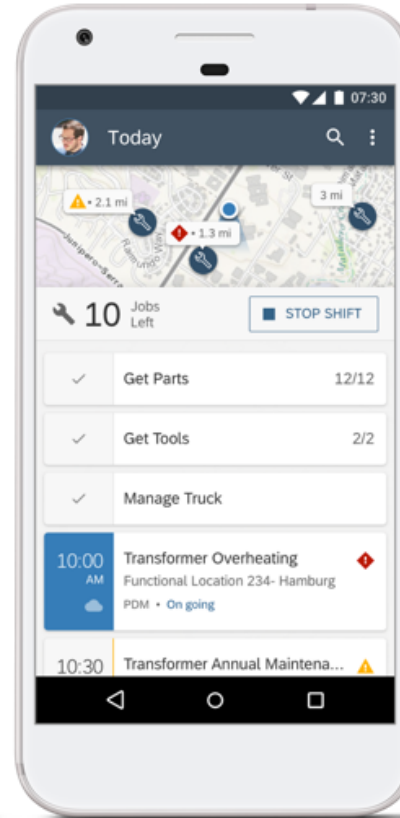
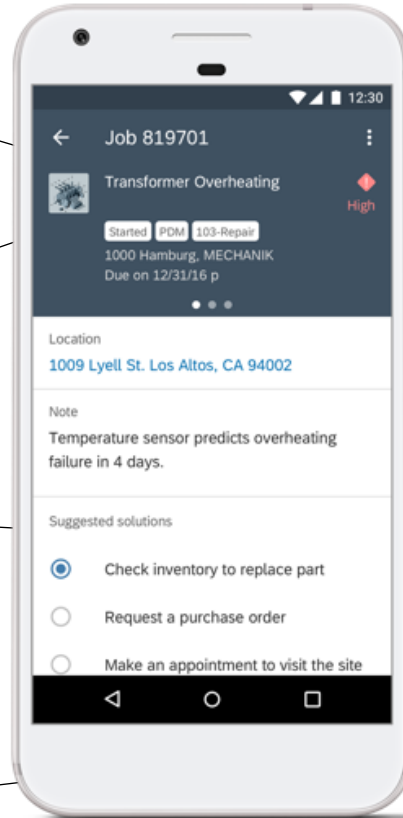
Benefits

Empower designers and developers with tools to quickly and efficiently build Android apps for the enterprise

Enable apps with native Android look and feel high performance

Accelerate development with APIs for enterprise communications, security, encryption & onboarding

Innovate by taking advantage of rich Android device features like Fingerprint Scanner, location services and notifications



Capabilities

SDK for Android accelerates enterprise app development in Android Studio IDE

Accessible from Java or Kotlin

Rich set of UI controls, implementing **SAP Fiori for Android design language**

SDK Wizard automatically generates fully running app scaffolding by reading metadata from backend enterprise APIs

SAP Fiori Mentor for Android

SAP Business Technology Platform Mobile Services

Mobile Development Kit



Benefits

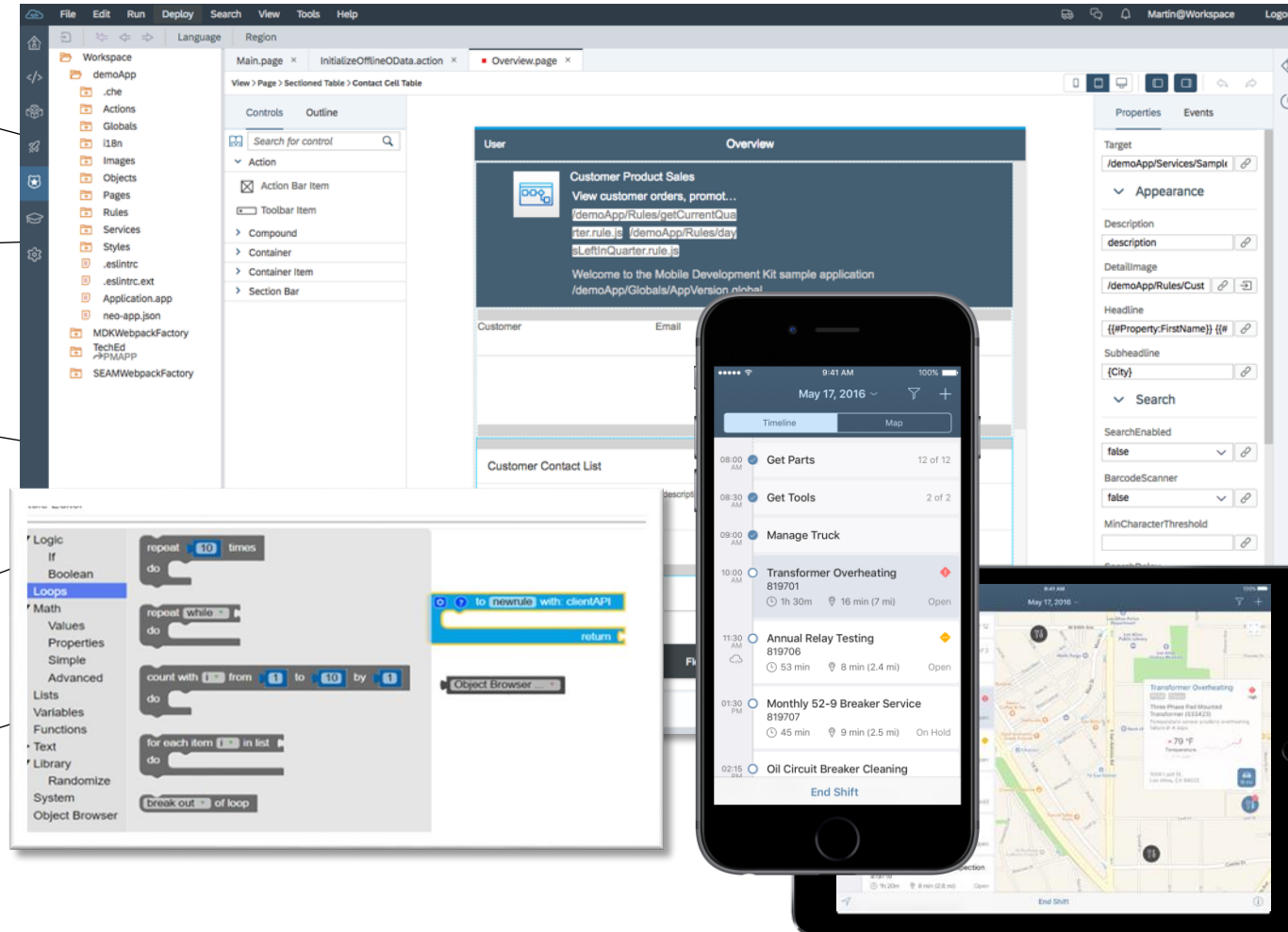
Reduce app development costs by leveraging drag and drop simplicity of low-code tooling

Increase capacity to meet mobile app demand without professional developers

Optimize select pre-built SAP apps (SAP Asset Manager, etc.) by customizing them to meet unique business needs

Relieve maintenance burden by simplifying lifecycle management without re-installing apps

Simplify security by not needing to maintain security for individual apps.



Capabilities

Code-free tool that speeds the process of creating applications for mobile platforms

WYSIWYG Editor, rule editor based on Google Blockly, extensible via Plug-ins

Support for building customized clients Cloud Build Service

Cross-platform, running on Android and iOS

Application definitions represented using metadata which is dynamically interpreted on the client to render the native UI

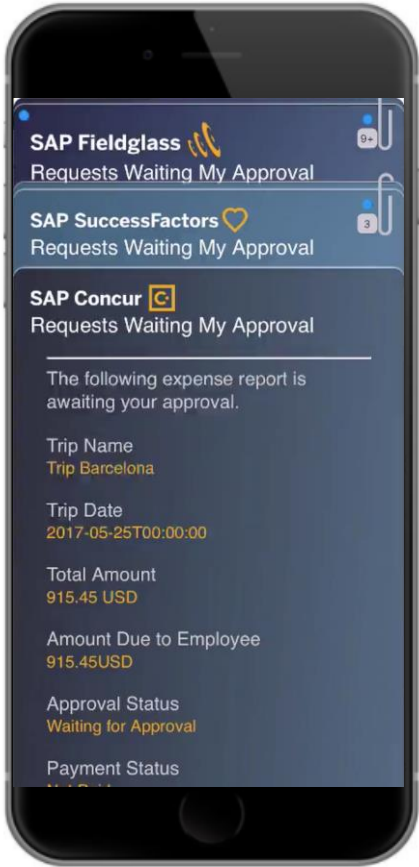
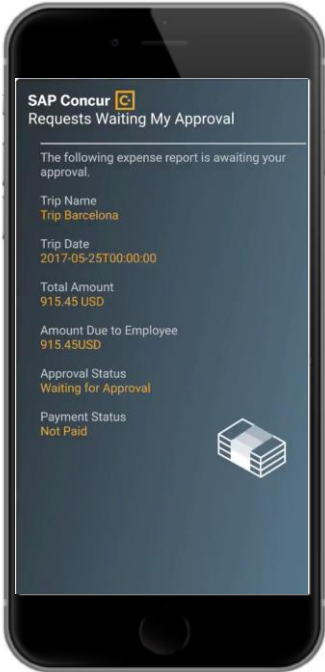
SAP Business Technology Platform Mobile Services



SAP Mobile Cards

Benefits

- Reduce costs by mobilizing data in familiar Wallet style apps without development
- Maximizes time to value with prebuilt content from SAP S/4HANA Fiori Launchpad
- Share only the information users need, eliminating navigation across systems
- Provide additional channel to access content that's most important to users
- Scale quickly with new content with minimal coding to no coding



Capabilities

- Provides instant content, context, availability with always available cards
- Push updates, subscriptions, user selected content cards
- Create content cards for SuccessFactors, FieldGlass, Ariba, etc. with low code.
- Deploy content from Smart Template apps. No coding required
- Full offline availability with background updates
- Phone integration for maps, location, email, SMS, and voice calling, Apple Watch

Exercise 6 (Mobile!): 4 (5) x Chapters

Chapter 1 - Mobile Services Configuration

Chapter 2 - Building a mobile application with MDK

Chapter 3 - Deploying a Mobile Development Kit Application – only 1 step!

Chapter 4 - Connecting the Mobile Client to SCP Mobile Services

Chapter 5 - Adding a little bit of polish to your Mobile Application (optional)

Mobile Steps:

Chapter 1 - Mobile Services Configuration

Chapter 2 - Building a mobile application with MDK

Chapter 3 - Deploying a Mobile Development Kit Application – only 1 step!

Chapter 4 - Connecting the Mobile Client to SCP Mobile Services

Chapter 5 - Adding a little bit of polish to your Mobile Application (optional)

Final Result

AT&T8:20 PM45%

Incident List+

Item Search

test incident

New >

descriptip

anonymous

Security

- CAI

New >

hardware: New i...

anonymous

Hardware

- CAI

New >

security: New in...

anonymous

Security

mock title - CAI

New >

software: New i...

anonymous

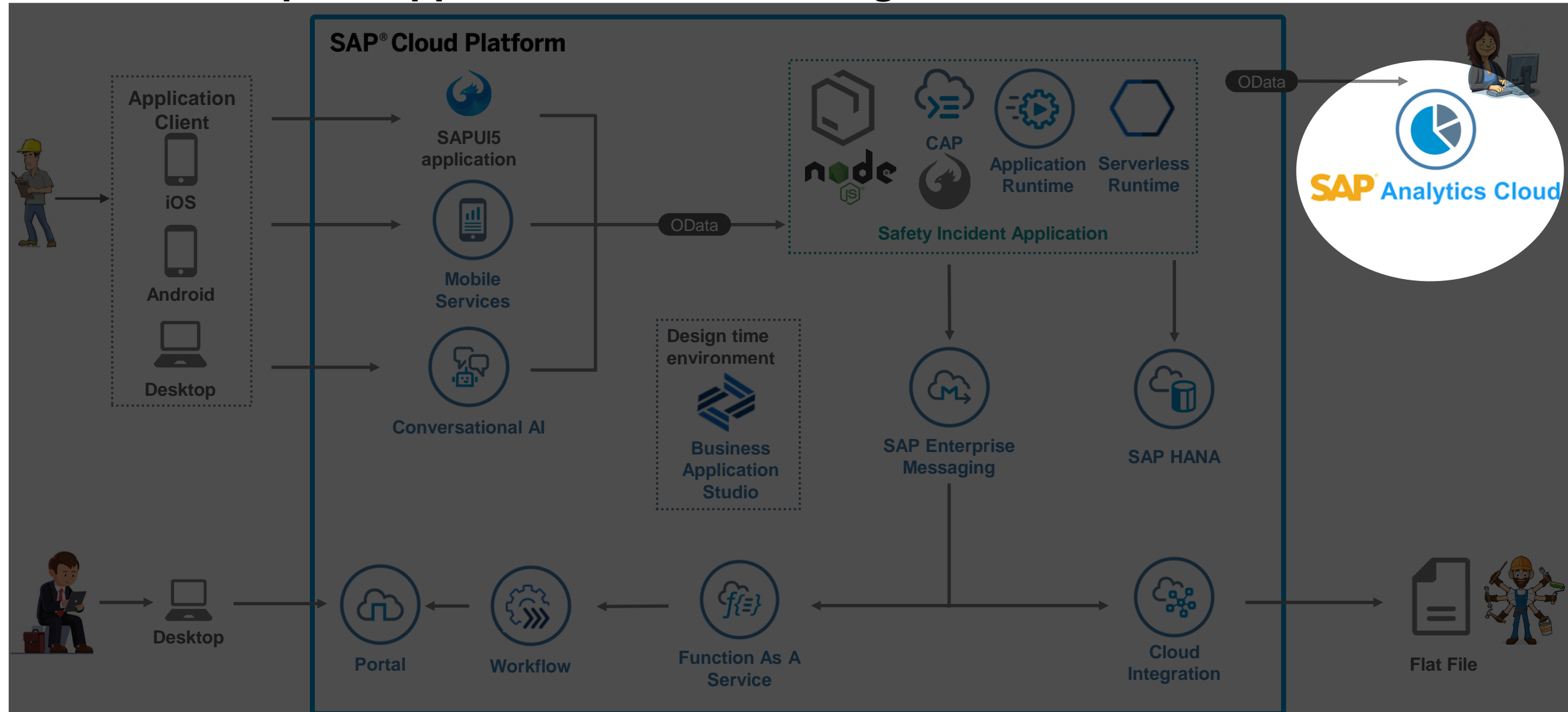
Logout

Chapter 7

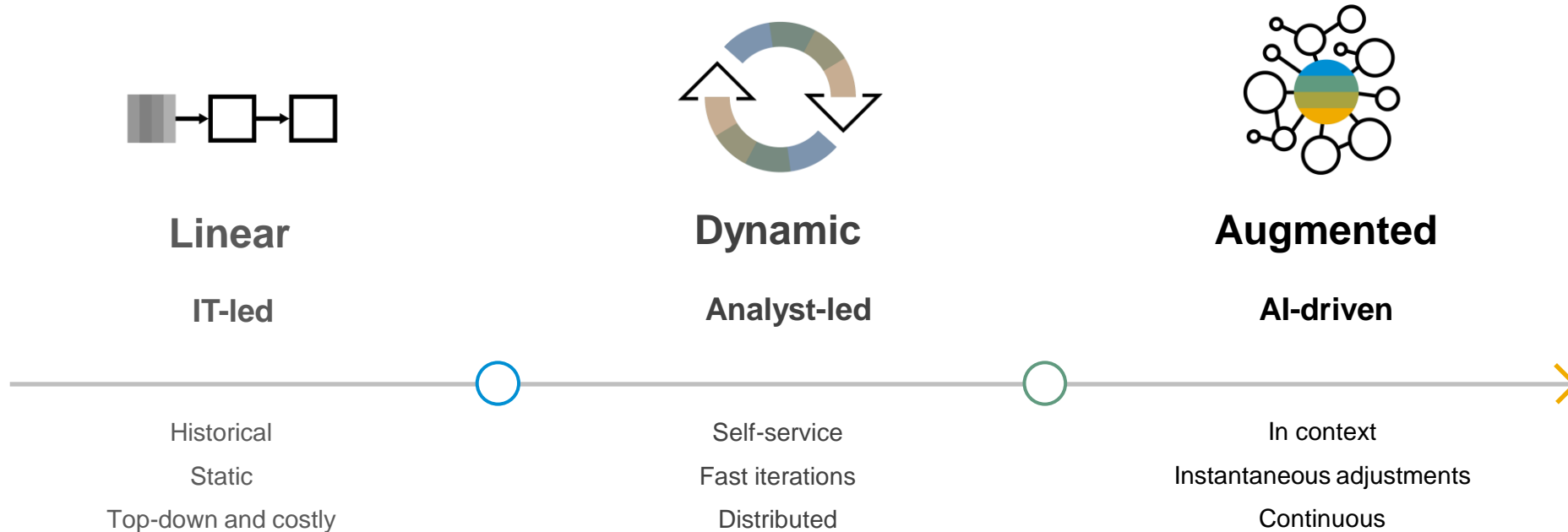
SAP Analytics Cloud



Service Request Application – Solution Diagram



Evolution of decision making



SAP Analytics Cloud

Act with Confidence



Digital Boardroom
Executive Analytics

Stories
Dashboards & Reports

Analytic Applications
Scripting & Extensions

MS Office Integration
Office 365



Business Intelligence

Data Discovery & Exploration
Storytelling & Visualizations
Enterprise Reporting



Augmented Analytics

Conversational Analytics
Automated Analytics
Predictive Analytics



Enterprise Planning

Events and Workflows
Allocations
Sharing & Simulation



PLATFORM SERVICES

Data Connectivity
Data Preparation
Modeling

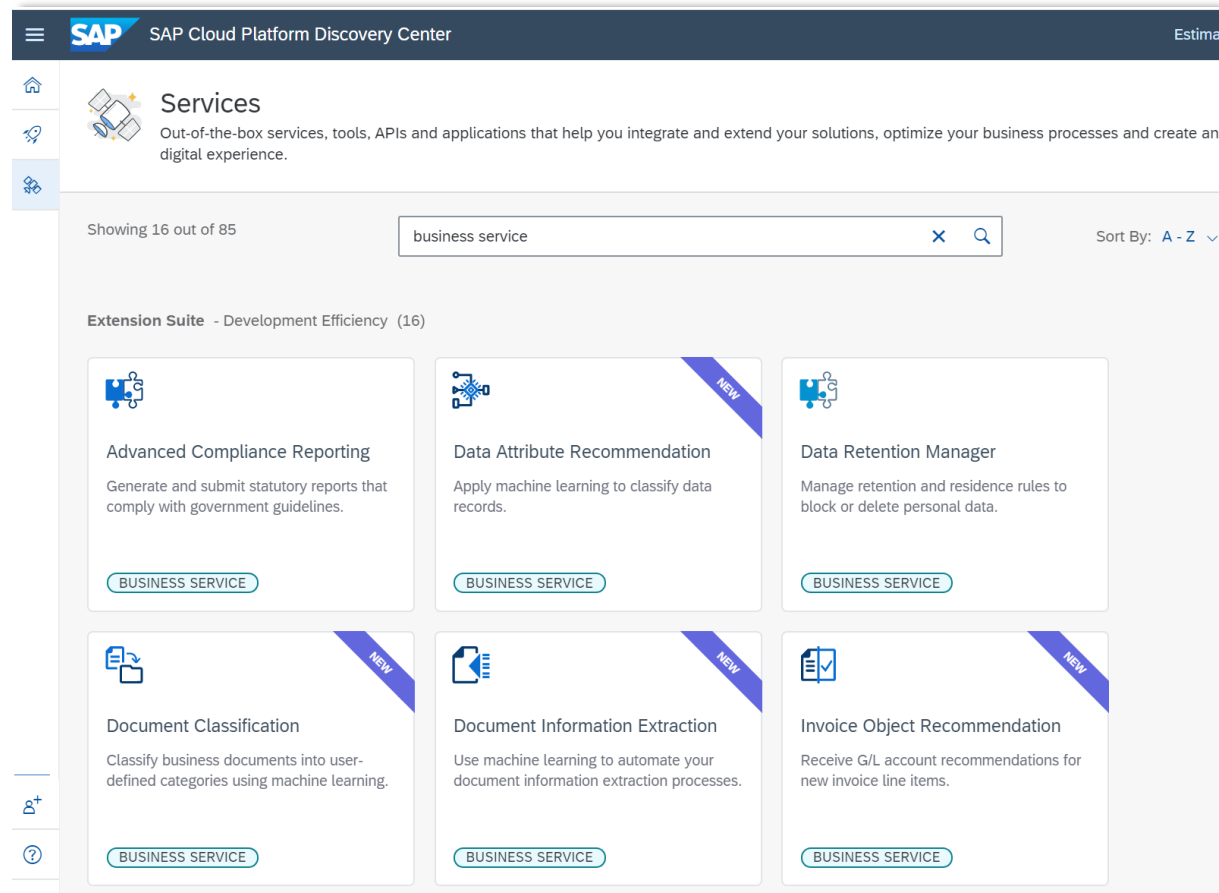
Administration
Lifecycle Mgmt
Auditing

Scheduling
Collaboration
SDK's

Further Information



SAP Business Technology Platform Discovery Center – The Single Source of Truth for Business Service Offerings



The [Discovery Center](#) shows the available Business Services in the [Service Catalog](#).

Solution architects, consultants and development teams can find all necessary information about the services, and the use cases (missions) for implementing the services to solve a business problem

[Business Service within the Service Catalogue](#)

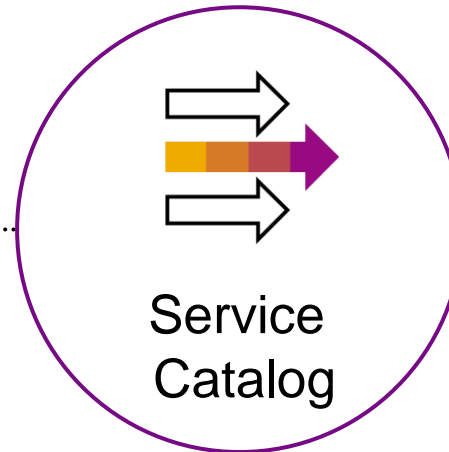
Find out more



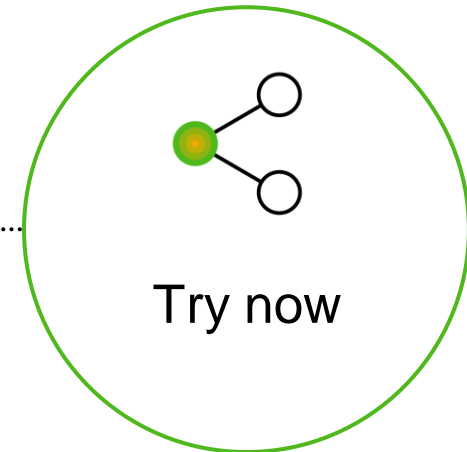
[Road Map Explorer](#)



[Find your mission](#)



[Discover SAP BTP services](#)



[Try SAP BTP](#)

Let's See it **in Action**



Kurt Kristiansen



HANDS-ON

Time!

SAP Business Technology Platform Technical Academy – Getting Started

- Technical Academy Home Page
- Always start here:
- Login with your assigned “P” user id/password
- Initial Password is: **Initial1** for the P-user in the landing page
- P-user and Platform user

All Exercises

Cloud Foundry (Platform) User

Overview

Exercises

Platform User

Business Application Studio

Process Integration

Enterprise Messaging

Extension Center

Conversational AI

Mobile Services

Portal

Web IDE

Analytics Cloud

Development Tools

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