



# SAP Strategy for Mobile Warehousing in S/4HANA

## Session: 84117

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May, 2019

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ASUG

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# Agenda

SAP EWM – Deployment Options

S/4HANA On-Premise – Mobile Warehousing

S/4HANA Cloud – Mobile Warehousing

Demo: Example Mobile App for S/4HANA Cloud

Q&A

# Key Outcomes/Objectives

1. The “RF Framework” (+ ITS Mobile) is still the main offering for mobile warehouse transactions in an ON-PREMISE system
2. In S/4HANA Cloud the APIs are the only way to build mobile apps
3. APIs for Warehousing have just started and more APIs are planned for the future

**SAP EWM**

**Deployment Options**

# Extended Warehouse Management: Deployment Options



## On Premise

**Business Suite decentral EWM**



**EWM embedded in S/4HANA**



## Cloud

**EWM S/4HANA Cloud, Single Tenant Edition, decentral**



**S/4HANA Cloud, multi-tenant**



# **S/4HANA On-Premise**

## **Mobile Warehousing**

# ITS Mobile

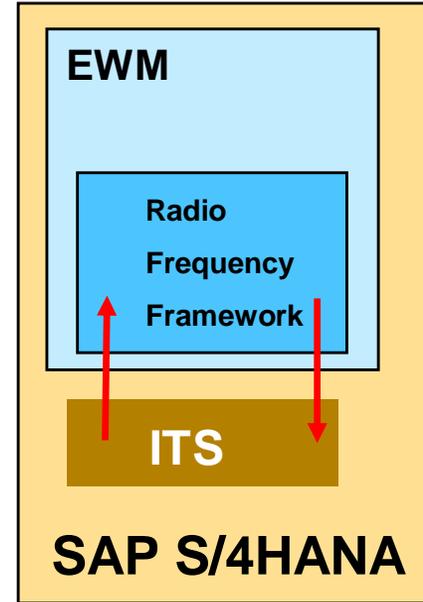
## Internet Transaction Server:

- is part of the SAP Kernel
- is fully integrated in the SAP system landscape
- requires no additional installation

## ITS Mobile:

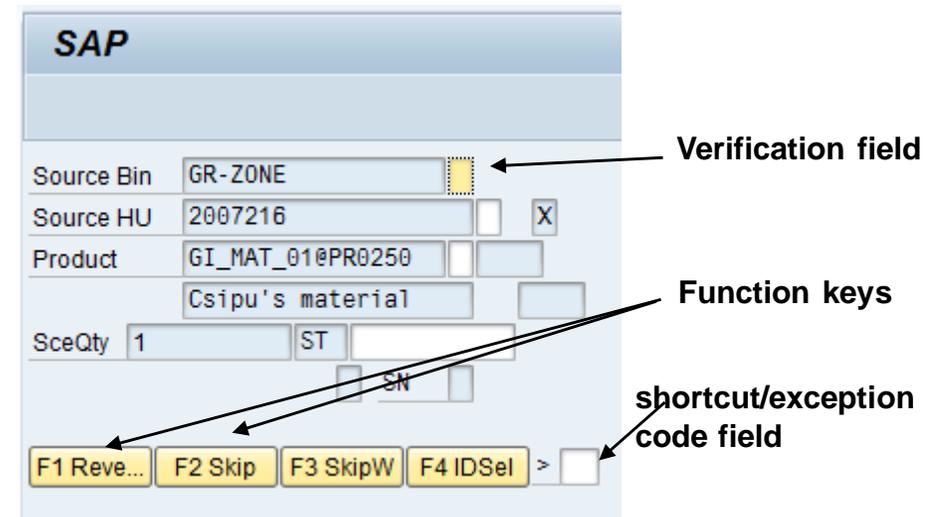
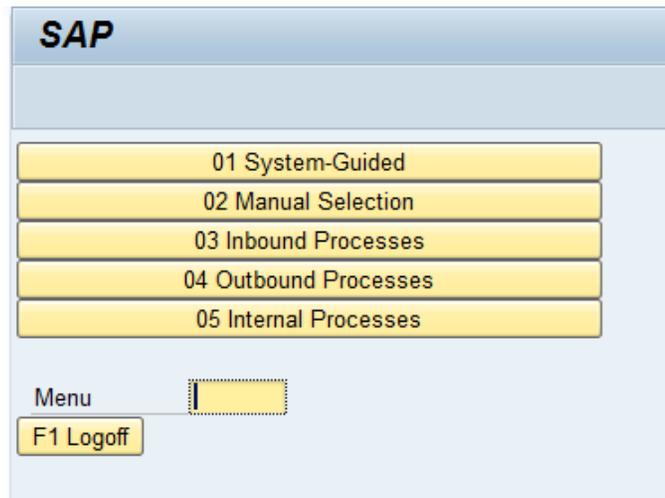
- There has to be a HTML Business template for each mobile screen
- Development and transport of the templates is done in the SAP system
- You have the full control on the design and layout only depending on the capabilities of you browser

→ To make the creation of the HTML Business templates easier we offer a template generator for mobile devices



# RF Framework

- Decouples business logic from the physical presentation of application data on a mobile device
- Supports a large variety of device sizes, device types, and data entry types
- Calls appropriate services according to resource inputs (such as verification/input data, keystroke, or logon request)
- Enables personalized menus and screens
- Enables flexible and user-friendly screen and flow logic generation and modification



# Configure your Menu with RF Framework



**Menu Manager**

Descriptions Presentation Texts

Menus and Logical Transactions

Main Menu	Object Type	Object ID	Description
<input checked="" type="checkbox"/>		MAIN	
<input type="checkbox"/>		MANSEL	
<input type="checkbox"/>		MCMAIN	Consumption
<input type="checkbox"/>		MRHUMA	Rec. HU by Manufac
<input type="checkbox"/>		OBMAIN	
<input type="checkbox"/>		PAMAIN	
<input type="checkbox"/>		PBV	
<input type="checkbox"/>		PIMAIN	
<input type="checkbox"/>		PPMAIN	
<input type="checkbox"/>		PTMAIN	
<input type="checkbox"/>		PTPSCR	
<input type="checkbox"/>		QMCN	
<input type="checkbox"/>		QMDH	

Menu Hierarchy -Descriptions

Object	Sequence
MAIN	
SYGUID	01
WKSYSG	01
WKSYSQ	02
MANSEL	02
WKMNWO	01
WKMNHU	02
WKMNWR	03
IBMAIN	03
ULMAIN	01
SPMAIN	02
PTMAIN	03
RHMAIN	04
OBMAIN	04
IMMAIN	05

**SAP**

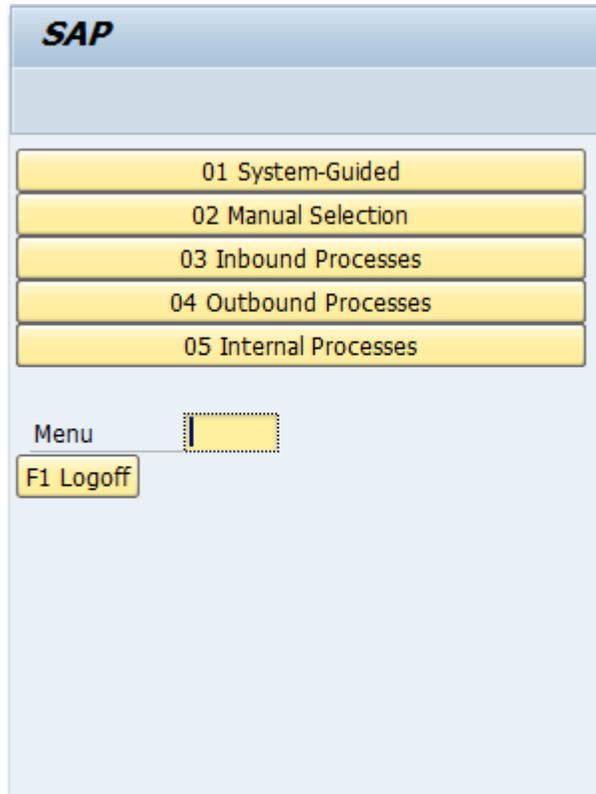
01 System-Guided
02 Manual Selection
03 Inbound Processes
04 Outbound Processes
05 Internal Processes

Menu

F1 Logoff

# RF Framework: **Taylor-Made** Mobile Screens for Specific Needs

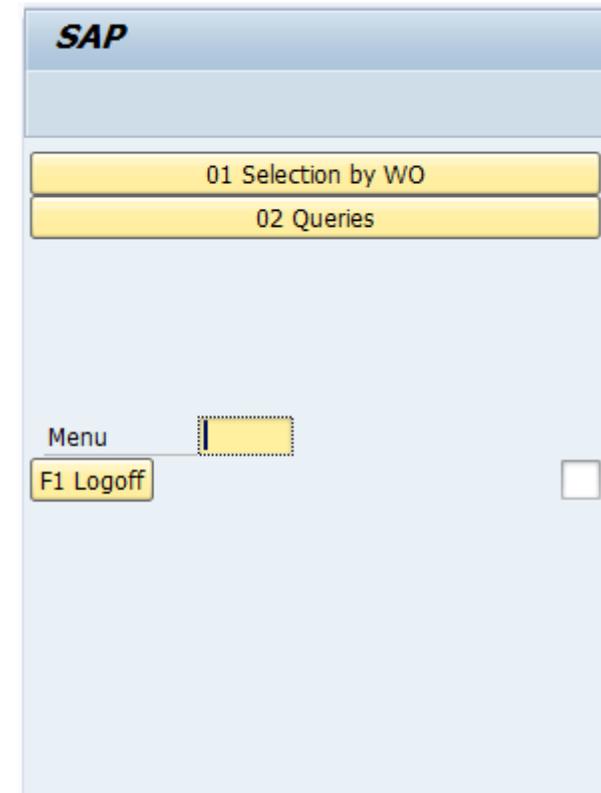
## Personalization of RF Mobile Menu



**Before**

Personalize Menu  


**Menu  
Manager**

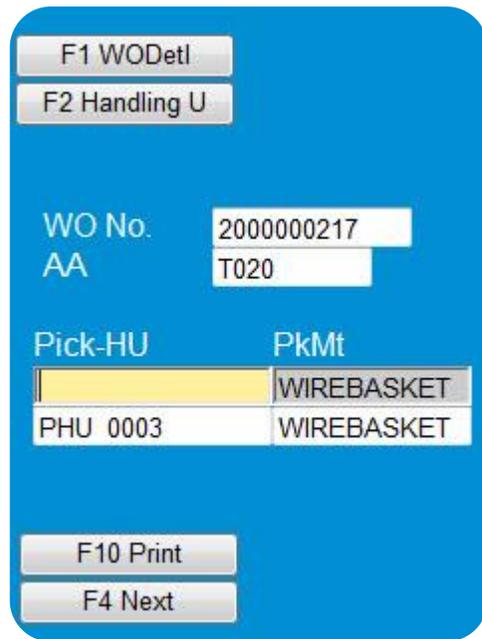


**After**

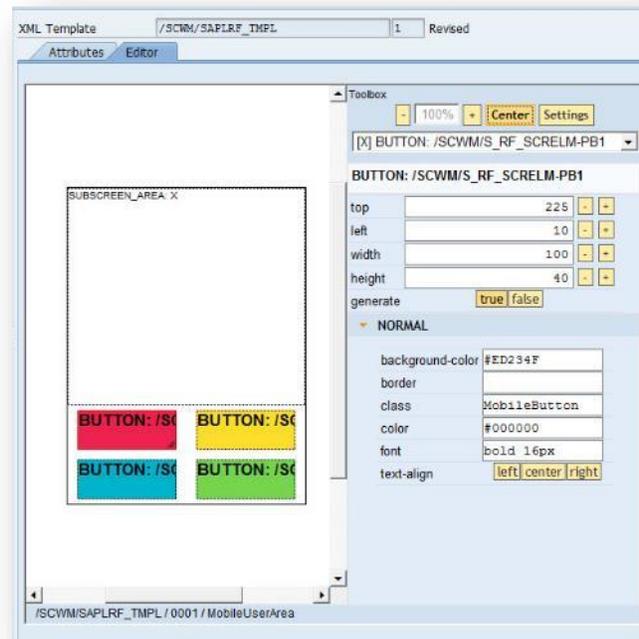


# Rearrange & Format Screen Element Button

## ITS mobile Visual Editor



Before



After



# Configure your Screens with RF Framework



The screenshot displays the SAP RF Screen configuration interface. The main window is titled "RF Screen - Enhancement Trigger Dialog". On the left, there is a data entry area with fields for WO (2000001408), WT (1000001518), QUL\_BRSO1\_375C (Double-Seated Valve), GWPPr (31,97), KG, GVPPr (54,434), CD3, 40 / 27 / 33, CM, STyp (F2), Ownr (BPTM01), PEnt (BPTM01), and F1 WODetl.

The central pane shows "RF Screen - Technical Information" with the following details:

- Application: 01
- Display Profile: DK
- Present. Prof.: \*\*\*\*
- Prsn. Prof.: \*\*
- Log. Trans.: PISYSG (Simulated)
- Step: DETAIL
- State: PLMT
- Screen Sequence: 01
- Screen Program: /SCWM/SAPLRF\_PICKING
- Screen Number: 600
- Pushb.Qty: 04
- Func. Key Qty:

Below the technical information are "Modification Options":

- Modify Screen
- Split Screen
- Undo Modifications
- Start Screen Painter
- Start Menu Manager

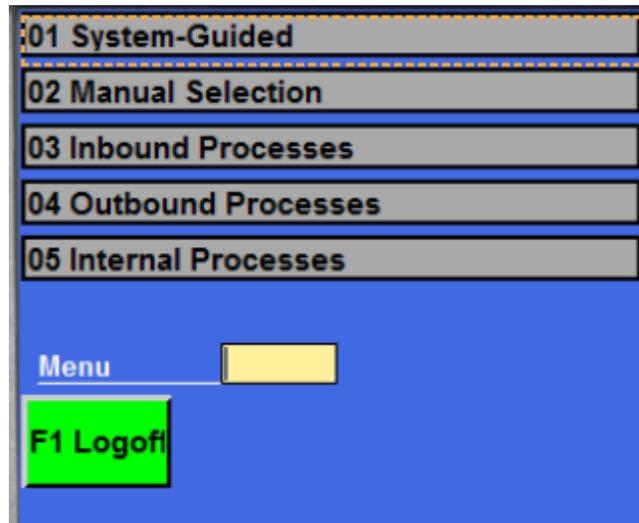
An inset window titled "Screen Painter: Display Screen /SCWM/SAPLRF\_PICKING 0600" is open, showing a visual representation of the screen layout with fields for WO, WT, GWPPr, GVPPr, Btch, STyp, and Ownr, PEnt.

# Support of Mobile Devices

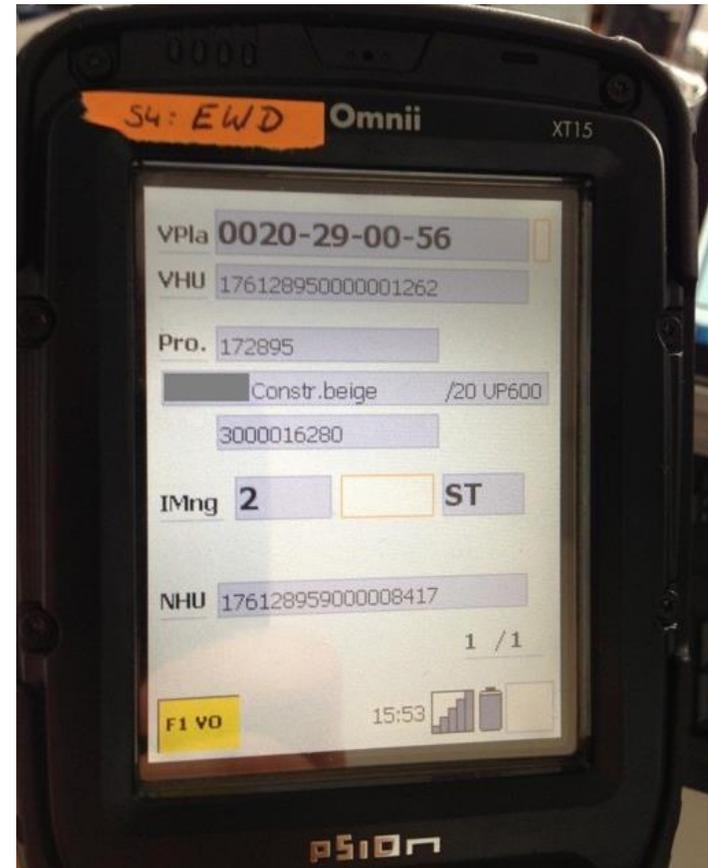
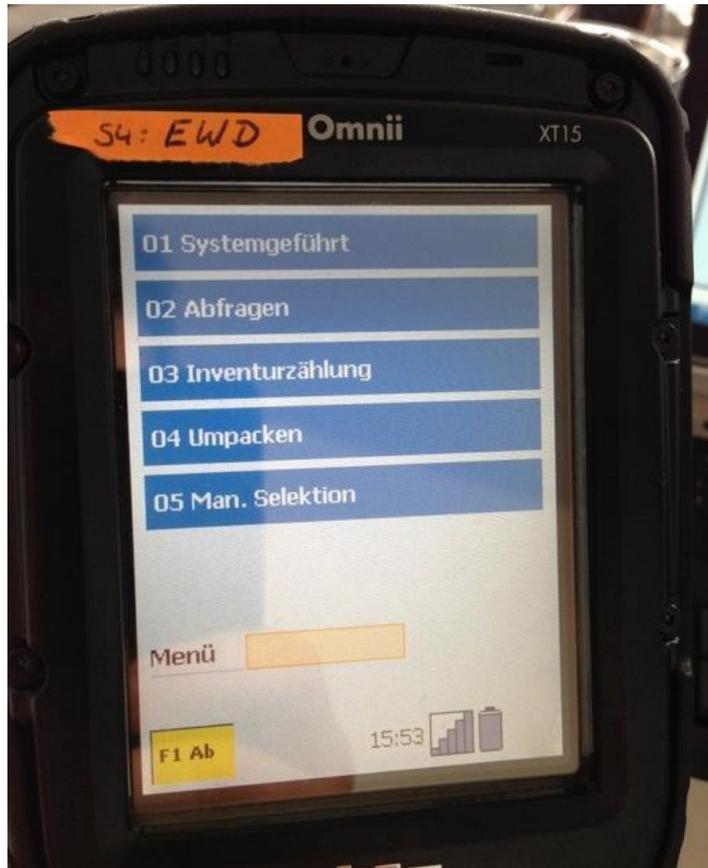
## EWM Radio Frequency Framework

The **RF framework** provides standard RF-functionalities, including the following warehouse processes:

- Picking
- Put Away
- Loading / Unloading
- Deconsolidation
- Packing
- Physical Inventory
- Replenishment
- Quality Control
- Queries (stock, bin, Handling Unit)
- Yard Movements



# Customer Examples of Mobile Screens



# **S/4HANA Cloud**

## **Mobile Warehousing**

# Motivation

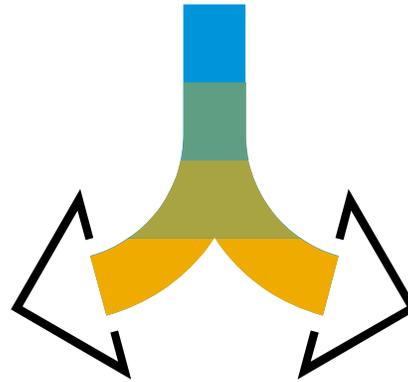
## Cloud Warehouse Management

request for Mobile Warehouse / Scanning Applications e.g. picking, put-away, counting



### Use RF in the Cloud?

- Cloud Customer cannot enhance the screen / logic (not possible to touch ABAP code)
- Does not leverage the capabilities of modern devices



### Build FIORI Apps?

- Performance not sufficient for high-speed scanning
- Designs for shop-floor only applications not ready

Use something new

# Application Programming Interface (API)



## API

*noun* COMPUTING

a set of functions and procedures allowing the creation of applications that access the features or data of an operating system, application, or other service.

# SAP API Business Hub (<https://api.sap.com/>)



SAP API Business Hub Getting Started Log On →

## SAP API Business Hub

Discover and consume digital content packages with APIs, pre-packaged integrations, and sample apps from SAP and select partners

Type here to search

**SOLUTIONS**

- [SAP S/4HANA Cloud](#)
- SAP S/4HANA
- SAP C/4HANA
- SAP SuccessFactors
- SAP Fieldglass
- SAP Concur
- SAP Ariba
- SAP Cloud Platform

**CONTENT TYPES**

- APIs
- Integration

### SAP S/4HANA Cloud

The next generation digital core designed to help you run simple in a digital economy.

<p><b>SAP Customer Engagement Center Integration with SAP ER...</b></p> <p>Replicate business partners from SAP ERP, SAP S/4HANA, or SAP S/4HANA Cloud.</p> <p>1 Integration Content <span>4.1K+</span></p>	<p><b>SAP S/4HANA Cloud</b></p> <p>SAP S/4HANA Cloud, the next generation digital core designed to help you run simple in a digital economy.</p> <p>264 APIs <span>0.2M+</span></p>	<p><b>SAP S/4HANA Cloud Integration with Third-Party Sales Force...</b></p> <p>This integration package enables to read business partner data, product details, as well as read, create, change or delete sales order in S/4HANA Cloud.</p> <p>5 Integration Content <span>4.2K+</span></p>
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[View more](#) Updates

## SAP S/4HANA

# API - Process Warehouse Tasks



SAP API Business Hub Getting Started Log On →

## Process Warehouse Tasks - Read, Update (A2X)

You can use this service to integrate external applications with warehouse orders and warehouse tasks in SAP S/4HANA Cloud

Show API Key Download SDK

<> API References Details

API Environment:  Configure Environments

WarehouseOrder	GET	/WarehouseOrder	Try out	Code Snippet
WarehouseTask	GET	/WarehouseOrder(Warehouse='{Warehouse}',WarehouseOrder='{WarehouseOrder}')	Try out	Code Snippet
WarehouseTaskExceptionCode	GET	/WarehouseOrder(Warehouse='{Warehouse}',WarehouseOrder='{WarehouseOrder}')/to_WarehouseTask	Try out	Code Snippet
Service Operations	GET	/WarehouseTask(Warehouse='{Warehouse}',WarehouseTask='{WarehouseTask}',WarehouseTaskItem='{WarehouseTaskItem}')/to_WarehouseOrder	Try out	Code Snippet
Batch Requests				

# Building a Mobile App – SAP Mobile Development Kit

SAP S/4 HANA CE  
Enterprise Edition

SAP S/4HANA Cloud  
Warehouse Management

The screenshot shows the SAP Cloud Platform Cockpit interface. On the left, a sidebar lists navigation options: Overview, Applications, Services, Solutions, SAP HANA / SAP ASE, Connectivity, Security, and Repositories. The main workspace is titled 'DisplayWHTasks.page' and shows a project structure with folders like 'EWM\_Picking', 'MDKWebpackFa', and 'EWM\_Test\_Oper'. A central pane displays a table titled 'Warehouse Tas...' with columns for '{tanum}' (Task Nr.) and '{vsola}' (Quantity). The right-hand side features a 'Properties' panel with sections for 'Object Table', 'Target', 'Service', 'EntitySet', 'QueryOptions', and 'Appearance'.

# Building a Mobile App – 3<sup>rd</sup>-Party Development Tools



The image displays three overlapping browser windows showcasing mobile development tools:

- NativeScript:** The top-left window shows the NativeScript website with a dark blue header and navigation menu (Docs, Showcases, Resources, Blog, About, Full menu). The main content area features the text "Build a mobile app with the power of JavaScript" and a prominent green "Get started" button.
- Flutter:** The middle window shows the Flutter website with a white header and navigation menu (Home, Plugins, Docs, Blog, FAQ, Support). The main content area has a blue and white abstract background with the word "Develop" partially visible.
- Apache Cordova:** The bottom-right window shows the Apache Cordova website with a dark theme. It features the Cordova robot logo, the text "APACHE CORDOVA™", and the tagline "Mobile apps with HTML, CSS & JS". Below this, it states "Target multiple platforms with one code base" and "Free and open source". There are icons for Android, Apple, and Windows, and two buttons: "GET STARTED" and "DOCUMENTATION".

**Demo**

**Example Mobile App for S/4HANA Cloud**

# RF Framework vs. APIs

RF Framework	
Pros	Cons
Screen Templates available	Does not support HTML5
Configuration Tools available	Standard UIs not state-of-the-art
Configuration in ABAP	ABAP Experts are needed to personalize
No additional license cost	
Proven solution (speed, stability,...)	

APIs	
Pros	Cons
Beautiful UIs	Develop your screens
No ABAP expert skills needed	Develop your business logic
Same App on multiple device types	Additional (App) license costs
App can use modern mobile features	

# Way forward

## Summary

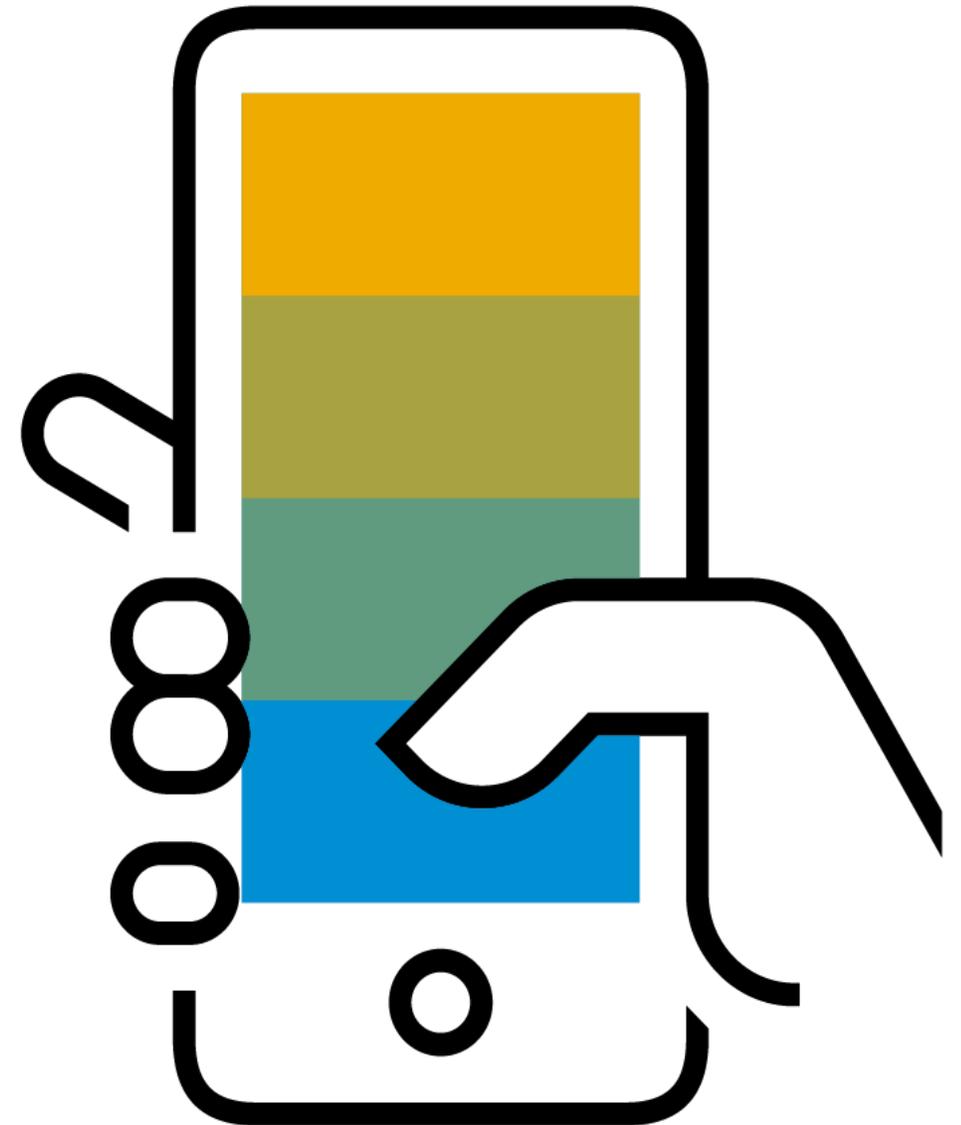
The “RF Framework” (+ ITS Mobile) is still the main offering for mobile warehouse transactions in an ON-PREMISE system

## Our direction

Open up the SAP EWM backend with published APIs to allow partners and customer to consume EWM data on any device.

## Goal for S/4HANA Cloud 1905

- Published API for Warehouse Order / Warehouse Task processing
- Published API for Resource Management related functions



# Q&A

For questions after this session, contact me at [Uwe.Pfisterer@sap.com](mailto:Uwe.Pfisterer@sap.com)

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# Presentation Materials

Access the slides from 2019 ASUG Annual Conference here:

<http://info.asug.com/2019-ac-slides>

# Thank you.

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