



# Certificate

## SAP INTEGRATION CERTIFICATION

### SAP SE

hereby confirms that the interface software

for the product TeamViewer Frontline - Augmented Reality

of the company TeamViewer Germany GmbH

has been Premium Certified as an SAP Endorsed App for running on SAP Business Technology Platform via the SAP integration scenario (IA Cloud Solutions).

This certificate confirms the technical compliance of TeamViewer Frontline - Augmented Reality with SAP certification procedures.

The certification test is documented in report no. 23489 and expires on 02 September 2025.

The certification is listed on the SAP Certified Solutions Directory: [www.sap.com/csd](https://www.sap.com/csd)

### Certified Functions:

- Integration with SAP Field Service Management
- Integration with SAP Service and Asset Manager
- Integration with SAP Digital Manufacturing
- Integration with SAP Extended Warehouse Management
- Meets Cloud Quality Requirements
- Meets Cloud Delivery Requirements
- Passed Security Code Scan Assessment
- Integration test for the proposed functional use cases

Parvathy S  
SAP, 02 September 2024



SAP certification focuses on technical integration with SAP solutions. Partner is responsible for the product itself, its error-free operation, and adherence to applicable laws.



# SAP Endorsed App Premium Certification: Test Report

IA Cloud Solutions

Application integrating with SAP Solutions

**Interface Certification: 23489**

|                             |                                                                                                                                 |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| SAP Interface incl. Release | IA Cloud Solutions<br>Based on an ICC Integration Assessment for SAP Solutions                                                  |
| Integrated to SAP solution  | SAP Field Service Management<br>SAP Service and Asset Manager<br>SAP Digital Manufacturing<br>SAP Extended Warehouse Management |

|                                                                                                                                    |                                          |
|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Name of Partner                                                                                                                    | TeamViewer Germany GmbH                  |
| Partner Number                                                                                                                     | 2495990                                  |
| Partner Product Name & Release<br>This is as same as Registered solution name in SAP Solution Hub with " <i>GTM Ready</i> " status | TeamViewer Frontline - Augmented Reality |
| Certification Date                                                                                                                 | 02 September 2024                        |
| Expiration Date                                                                                                                    | 02 September 2025                        |
| Location                                                                                                                           | SAP – Remote                             |
| Person Present - Partner                                                                                                           | Ashish Garg and Athan Papakostas         |
| Person Present - SAP                                                                                                               | Parvathy S                               |

**Certified Functions:**

- ☒ Integration with SAP Field Service Management
- ☒ Integration with SAP Service and Asset Manager
- ☒ Integration with SAP Digital Manufacturing
- ☒ Integration with SAP Extended Warehouse Management
- ☒ Meets Cloud Quality Requirements
- ☒ Meets Cloud Delivery Requirements
- ☒ Passed Security Code Scan Assessment
- ☒ Integration test for the proposed functional use cases

## PREMIUM CERTIFICATION SUMMARY REPORT

SAP Endorsed-App Premium Certification requires partner solution to fulfill the criteria listed in the

- Integration testing procedure
- Comply with Responsible AI requirements (if the solution has AI functionality)
- the static Security Code Scan Assessment performed by a third-party software vendor
- Cloud Qualities and Cloud Delivery checklist review

The solution 'TeamViewer Frontline Augmented Reality' has fulfilled the criteria listed in the

- Security Code Scan Assessment – using Veracode tool
- Cloud Qualities & Cloud Delivery checklist review
- Integration testing

Thus, it is considered that solution 'TeamViewer Frontline Augmented Reality' has completed the Premium certification successfully.

Please find the rest of the findings in this document.

## 1. PRODUCT INFORMATION

| Product information                                                                                                                     |                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Product name<br>Full name of your application as same as registered solution name in SAP Solution Hub with " <i>GTM Ready</i> " status. | TeamViewer Frontline Augmented Reality                                                                                          |
| Product web page                                                                                                                        | <a href="https://www.teamviewer.com/de/frontline/">https://www.teamviewer.com/de/frontline/</a>                                 |
| Integrated with SAP solution                                                                                                            | SAP Field Service Management<br>SAP Service and Asset Manager<br>SAP Digital Manufacturing<br>SAP Extended Warehouse Management |

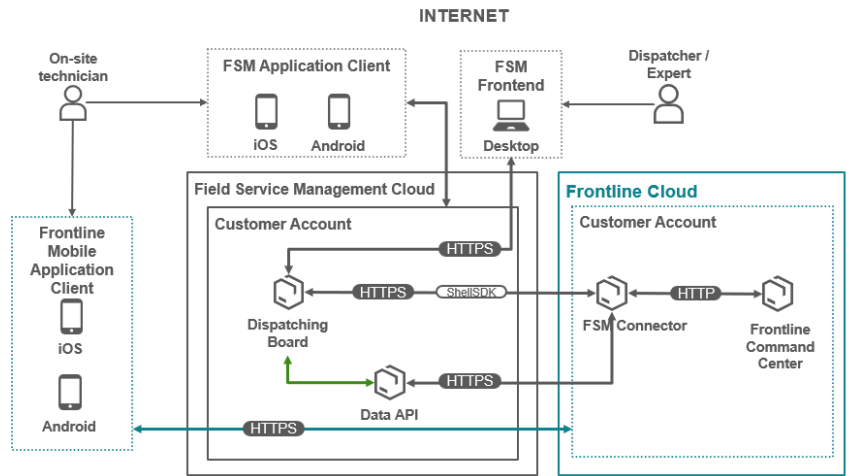
## 2. PARTNER PRODUCT OVERVIEW

| Supported Functions and Benefits – General Description               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Overview of the purpose and functionality of the partner application | <p>TeamViewer Frontline - Augmented Reality</p> <p><b>Faster to the Solution with xAssist</b><br/>With our remote support solution xAssist, you can easily connect a technical expert with employees on-site in the event of a problem. Thanks to smart glasses, the remote expert sees exactly what the technician on-site sees. This is made possible by real-time video and audio transmission.</p> <p>Functions such as AR markers help the expert to visually clarify his instructions. The employee's hands are free and can immediately follow the expert's instructions. The exclusive option of involving several users in a call also allows for support from external experts outside the company network.</p> <p><b>Relevant Information Directly in View with xInspect</b><br/>In asset-intensive industries, regular maintenance of enterprise assets is crucial for smooth and efficient operations. Increasingly complex hardware and elaborate maintenance tasks, field technicians working in remote settings and lack of expert knowledge leads to more errors in the field and longer downtimes.</p> <p>SAP Asset Manager (SAM) helps organizations address many of these challenges by providing access to context-rich visualizations that enable simple and timely execution of end-to-end enterprise asset management.</p> <p>The TeamViewer Frontline xAssist and xInspect integrations further enhance this value by connecting field technicians to step-by-step guidance for inspection and maintenance procedures and real-time access to remote experts to troubleshoot issues right as they work with AR-based workflows and video calls.</p> <p>With the TeamViewer Frontline integration, organizations can extend the capabilities of SAP Asset Manager enabling them to:</p> <ul style="list-style-type: none"> <li>• Reduce operational costs</li> <li>• Optimize maintenance processes</li> <li>• Boost workforce productivity</li> <li>• Improve knowledge transfer and training</li> <li>• Improve first-time fix-rates</li> </ul> <p>Build more resilient and agile supply chains with vision picking (xPick)</p> |

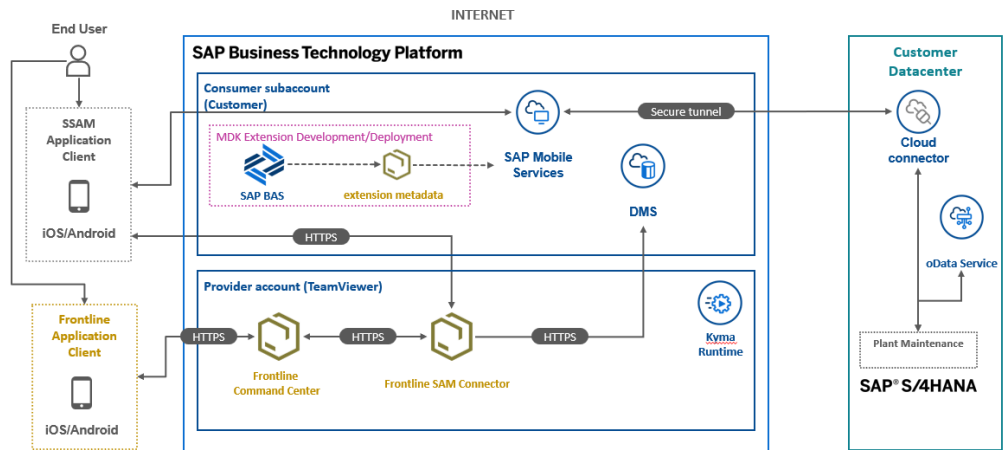
|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | <p>Goods distribution networks and supply chains are currently facing monumental challenges and pressures on all levels at a global scale, including:</p> <ul style="list-style-type: none"> <li>• increased demand from customers for super-fast delivery times</li> <li>• disrupted supply chains and mounting strain on supply networks</li> <li>• continued workforce challenges including labor shortages, higher costs, widening skills gap and higher churn</li> <li>• ambitious environmental and sustainability targets</li> </ul> <p>To respond more quickly, companies are needing to accelerate their digitalization efforts to be able to continue to service their customers and remain competitive.</p> <p>TeamViewer Frontline's vision picking solution, xPick, helps to increase productivity and create more efficient processes across your operations. Workers receive step-by-step instructions directly in their line of sight on smart glasses and wearable devices guiding them through their task while working hands-free. New data insights are passed back to the SAP EWM application in real-time to enable continual process validation and optimization.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| business scenario | <p>FSM Integration</p> <ul style="list-style-type: none"> <li>• We enhance the support process for field service technicians, by enabling real-time AR assisted video calls between experts and the technicians.</li> <li>• Through the TeamViewer Frontline product, technicians are able to perform their job faster and avoid repeat visits.</li> <li>• The instant documentation of all activities during the assistance call can support compliance and training processes.</li> </ul> <p>SSAM Integration</p> <ul style="list-style-type: none"> <li>• We have integrated xAssist and xInspect.</li> <li>• The xAssist integration supports the same processes as above. The differentiation is that the mobile application is extended allowing the service technician to easily initiate the support calls</li> <li>• Moreover, the addition of AR assisted workflows (xInspect) enable service technicians to: <ul style="list-style-type: none"> <li>○ Execute the maintenance/repair tasks while having visual instructions presented in their field of view via the smartglasses</li> <li>○ Work hands-free, which means safer and more productive</li> <li>○ Utilize AI components for security and QA purposes.</li> </ul> </li> </ul> <p>SAP Digital Manufacturing Cloud Integration</p> <ul style="list-style-type: none"> <li>• The integration requires Frontline Command Center, Frontline Connector + Con DM Connector + SAP DM APIs</li> </ul> <p>EWM Integration</p> <ul style="list-style-type: none"> <li>• The integration of vision picking (xPick) to Warehouse workers improves the product movement and storage processes by: <ul style="list-style-type: none"> <li>○ Providing real-time visual instructions to workers to help them perform the task with accuracy and without delay</li> <li>○ Performs automatic validation of each picking, putting and moving task e.g via scanning QR codes of Hus, via RFID checks etc.</li> <li>○ Provide real-time update to EWM of the status of the picking</li> <li>○ Enriches visual data shown to the worker via retrieving more information on the product from Material master</li> </ul> </li> </ul> |

ARCHITECTURE:

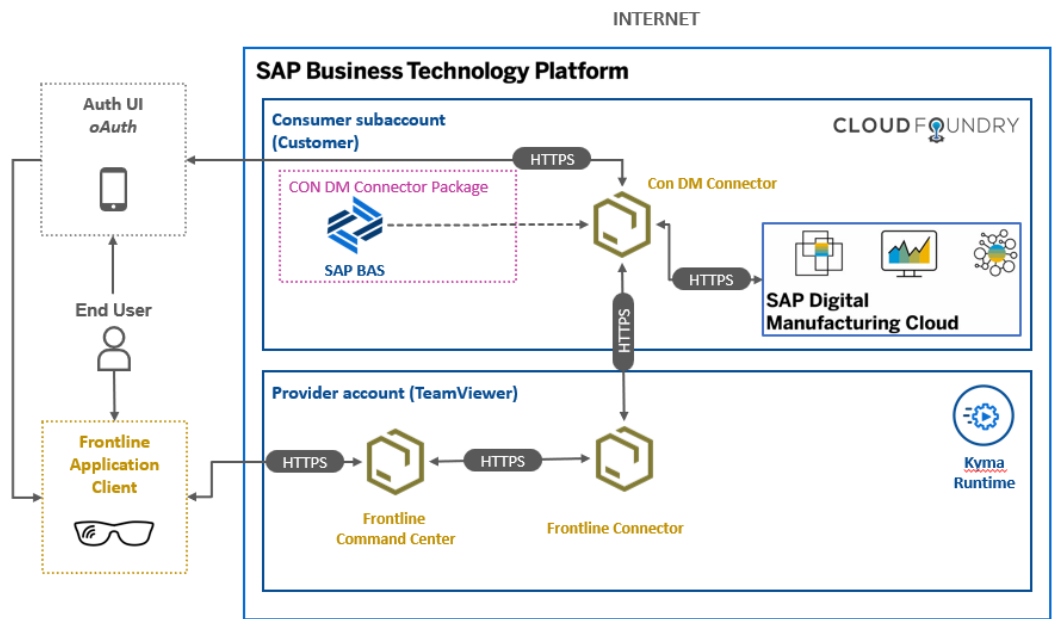
SAP Field Service Management  
Frontline xAssist Integration



SAM Integration Diagram



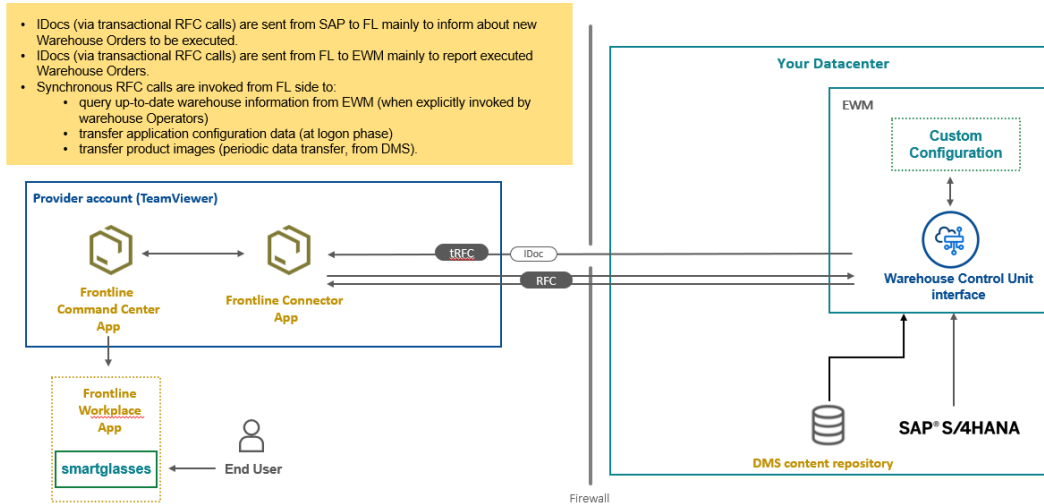
DM Integration Diagram



SAP Integration and Certification Center (SAP ICC)



## TeamViewer FL Integration to EWM – Architecture Diagram



### 3. APPLICATION CHECKLIST

| Technical details – General Description                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Technical Approach                                                                                                                                                 | <ul style="list-style-type: none"> <li>For SAP FSM integration, we have built a UI plugin that extends the FSM Dashboard with a UI widget that allows experts to see the technicians status and initiate an AR assisted call to them. Moreover we have built a Connector that utilizes the FSM APIs to achieve the desired functionality</li> <li>For the SSAM integration, we have extended the Asset Manager mobile app to add further menu options to allow field technicians to initiate xAssist calls, or create a QR code dynamically that launches an AR assisted workflow for the repair/maintenance of a component. Moreover, we have built a Connector Web Service running on BTP that implements the Business logic as well as connects to BTP DMS to store the call and maintenance reports</li> <li>For the EWM, we have built a connector that communicates with WCU component in EWM via tRFC/iDoc to send and receive WHOs and report the execution status.</li> </ul> |
| What programming languages or tools do you use to implement your product (multiple selections possible)?                                                           | <input checked="" type="checkbox"/> Java/J2EE/EE Application<br><input checked="" type="checkbox"/> SAP UI5/HTML5 Application<br><input checked="" type="checkbox"/> SAP BTP Business Application Studio<br><input checked="" type="checkbox"/> Other<br>Provide name: Angular, Spring framework, Typescript, node.js                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| List server platform that the product runs on                                                                                                                      | JavaVM<br>BTP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| List down the BTP services used/implemented<br><a href="https://discovery-center.cloud.sap/service-catalog">https://discovery-center.cloud.sap/service-catalog</a> | Business Application Studio<br>Cloud Foundry<br>Document Management Service, Application Option<br>Document Management Service, Integration Option<br>Kyma Runtime<br>Mobile Services                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Which database on the SAP BTP do you use? (If applicable)                                                                                                          | <input type="checkbox"/> HANA<br><input type="checkbox"/> ASE<br><input checked="" type="checkbox"/> Not Applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

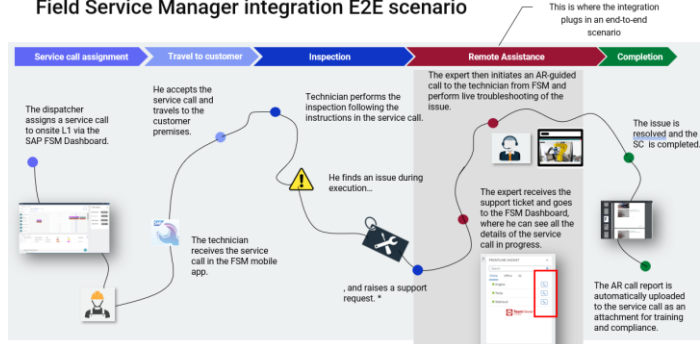
### Integration with SAP Solution – SAP Field Service Management

|                                                   |                                                                  |
|---------------------------------------------------|------------------------------------------------------------------|
| Which SAP Solutions does your software integrate? | <input checked="" type="checkbox"/> SAP Field Service Management |
|---------------------------------------------------|------------------------------------------------------------------|

SAP Integration and Certification Center (SAP ICC)



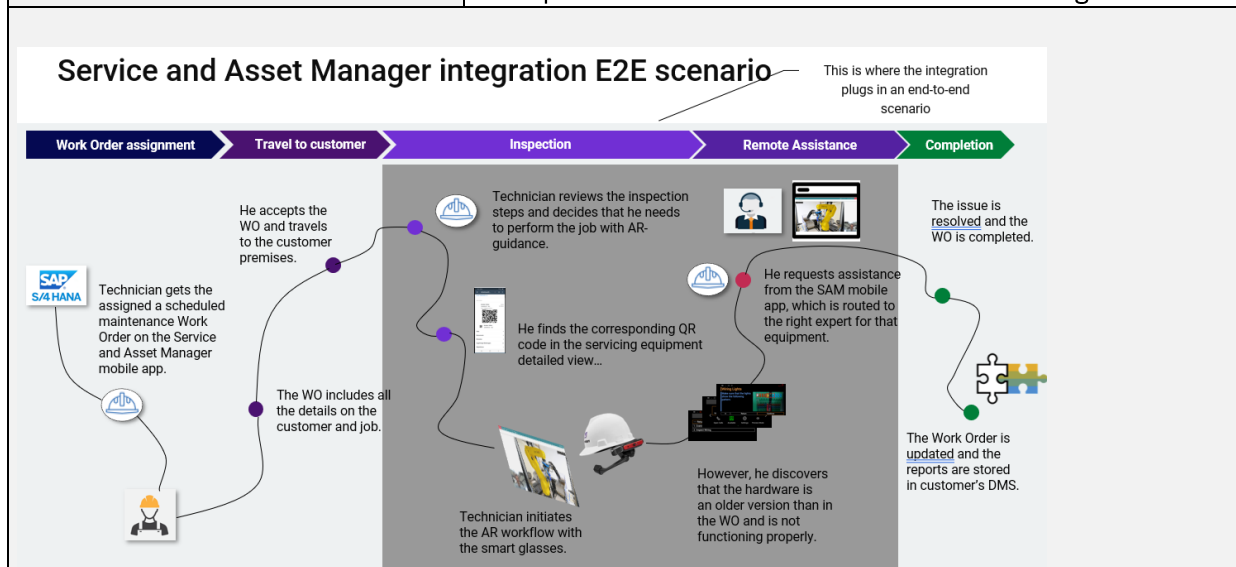
| <p>The SAP Field Service Management solution supports your technicians with mobile tools to speed up issue resolution and make the service experience effortless for customers, and increase customer satisfaction by providing proactive customer service with machine learning and IoT technology.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p>Add Live Video with AR marker with capturing media and generate reports out of it</p> <p>Based on the activities in the service case we generate reports which are provided to SAP FSM for further usage.</p> <p>Calls can also be started from the FSM mobile app</p>                                                                                    |                   |                   |         |         |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|---------|---------|---------|------------------------------------------------|---|---|---|---|---|-------------------------------------------|---|---|---|---|---|--------------------------------------|---|---|---|---|---|------------------------------------------|---|---|---|---|---|--------------------------------|---|---|---|---|---|-------------------------------|---|---|---|---|---|----------------------------------------------|---|---|---|---|---|------------------------------------------------------|
| <p>Explain how your application is integrated to SAP FSM.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>TMV does not use a database at all on the extension side.</p>                                                                                                                                                                                                                                                                                             |                   |                   |         |         |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| <p>Explain the development components and deliverables/deployables on SAP Field Service Management</p> <p><a href="#">SAP Field Service Management - SAP Help Portal</a> → Development</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>Extension app</p> <p>Using ShellSDK</p> <p>With APIs:</p> <p>Data API v4:<br/><a href="https://help.sap.com/viewer/fsm_data_api/Cloud/en-US">https://help.sap.com/viewer/fsm_data_api/Cloud/en-US</a></p> <p>Query API:<br/><a href="https://help.sap.com/viewer/fsm_query_api/Cloud/en-US">https://help.sap.com/viewer/fsm_query_api/Cloud/en-US</a></p> |                   |                   |         |         |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| <p>Do you utilise frontend framework to build modularizable, extensible, and consistent UIs and Web Apps?</p> <p>Explain.</p> <p>Such as Shell - <a href="#">Shell - SAP Help Portal</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>We use shell and SAP UI fundamentals</p>                                                                                                                                                                                                                                                                                                                  |                   |                   |         |         |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| <p>Mention the application URL.</p> <p>Example:</p> <p><a href="https://cluster}.coresystems.net/shell/#/login">https://cluster}.coresystems.net/shell/#/login</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>Per customer an extension access URL is provided</p>                                                                                                                                                                                                                                                                                                      |                   |                   |         |         |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| <p>Do you build SAP Field Service Management Application Extensions</p> <p><a href="https://help.sap.com/viewer/fsm_extensions/Cloud/en-US">https://help.sap.com/viewer/fsm_extensions/Cloud/en-US</a></p> <p>Explain.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>Yes</p>                                                                                                                                                                                                                                                                                                                                                   |                   |                   |         |         |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| <p>Supported Extension Capabilities for FSM apps and Mobile clients</p> <table><tr><th>Extensions Capabilities</th><th>Web applications</th><th>Shell Home Screen</th><th>iOS</th><th>Android</th><th>Windows</th></tr><tr><td>Custom UI displayed in a limited screen outlet</td><td>✓</td><td>X</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Custom UI displayed in full screen outlet</td><td>✓</td><td>✓</td><td>X</td><td>X</td><td>X</td></tr><tr><td>User token with OAuth Authentication</td><td>✓</td><td>✓</td><td>X</td><td>X</td><td>X</td></tr><tr><td>User token with non OAuth Authentication</td><td>✓</td><td>✓</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Launch an external application</td><td>X</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>Custom UI with own navigation</td><td>X</td><td>✓</td><td>X</td><td>X</td><td>X</td></tr><tr><td>Custom UI making use of the Shell navigation</td><td>X</td><td>✓</td><td>X</td><td>X</td><td>X</td></tr></table> | Extensions Capabilities                                                                                                                                                                                                                                                                                                                                      | Web applications  | Shell Home Screen | iOS     | Android | Windows | Custom UI displayed in a limited screen outlet | ✓ | X | X | X | X | Custom UI displayed in full screen outlet | ✓ | ✓ | X | X | X | User token with OAuth Authentication | ✓ | ✓ | X | X | X | User token with non OAuth Authentication | ✓ | ✓ | X | X | X | Launch an external application | X | ✓ | ✓ | ✓ | ✓ | Custom UI with own navigation | X | ✓ | X | X | X | Custom UI making use of the Shell navigation | X | ✓ | X | X | X | <p>We provide Custom UI in limited screen outlet</p> |
| Extensions Capabilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Web applications                                                                                                                                                                                                                                                                                                                                             | Shell Home Screen | iOS               | Android | Windows |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| Custom UI displayed in a limited screen outlet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ✓                                                                                                                                                                                                                                                                                                                                                            | X                 | X                 | X       | X       |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| Custom UI displayed in full screen outlet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ✓                                                                                                                                                                                                                                                                                                                                                            | ✓                 | X                 | X       | X       |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| User token with OAuth Authentication                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ✓                                                                                                                                                                                                                                                                                                                                                            | ✓                 | X                 | X       | X       |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| User token with non OAuth Authentication                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ✓                                                                                                                                                                                                                                                                                                                                                            | ✓                 | X                 | X       | X       |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| Launch an external application                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | X                                                                                                                                                                                                                                                                                                                                                            | ✓                 | ✓                 | ✓       | ✓       |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| Custom UI with own navigation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | X                                                                                                                                                                                                                                                                                                                                                            | ✓                 | X                 | X       | X       |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| Custom UI making use of the Shell navigation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | X                                                                                                                                                                                                                                                                                                                                                            | ✓                 | X                 | X       | X       |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| <p>Do you follow SAP recommended approach for Extension architecture?</p> <p>Explain.</p> <p><a href="#">Developing Extension Applications - SAP Help Portal</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>Yes, we are following Oauthv2 access pattern to access the API.</p> <p>The extension requires the setup of an OAuth2 client for the FSM Account and appropriate access permissions for each company. This needs to be done to enable the installation of the extension.</p>                                                                               |                   |                   |         |         |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |
| <p>Extension Management is found in the “Foundational Services” of SAP Field Service Management.</p> <p>It enables users to discover and manage their Extensions for SAP Field Service Management.</p> <p>It is divided into two sections:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>Yes, our application uses the extension access URL.</p> <p>Extension link:</p> <p>After the extension instance has been provisioned an Extension Access URL will be provided by TeamViewer that is used to install the extension.</p>                                                                                                                     |                   |                   |         |         |         |                                                |   |   |   |   |   |                                           |   |   |   |   |   |                                      |   |   |   |   |   |                                          |   |   |   |   |   |                                |   |   |   |   |   |                               |   |   |   |   |   |                                              |   |   |   |   |   |                                                      |

|                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Extension Directory</p> <p>Installed Extensions</p> <p>Is SAP recommended approach as mentioned here <a href="#">Extension Applications Directory - SAP Help Portal</a> followed?</p> <p>Explain.</p>                                        | <p>Installation:</p> <p>The extension is installed via the 'Foundational Services' configuration</p>                                                                                                                                                                                                                                                      |
| <p>Authentication</p> <p>Authentication is used by an extension to generate a valid OAuth token and access FSM public APIs.</p> <p>What is the method followed in your application?</p> <p><a href="#">Authentication - SAP Help Portal</a></p> | <p>OAuth 2.0/Client Credentials is used</p>                                                                                                                                                                                                                                                                                                               |
| <p>Do you support multi-tenancy?</p>                                                                                                                                                                                                            | <p>No</p>                                                                                                                                                                                                                                                                                                                                                 |
| <p>Mobile app supported?</p> <ul style="list-style-type: none"> <li>- Android</li> <li>- iOS</li> </ul>                                                                                                                                         | <p>Yes, since extension 3.0.0 version, FSM mobile client can make xAssist calls on its own, This integration is based on the "Launch External App" feature and is available for Android and iOS</p> <p>Since extension version 3.2.0, connection is secure with the introduction of shared secret that is known to Frontline and FSM service workflow</p> |
| <p>Supporting documents</p>                                                                                                                                                                                                                     | <p>Installation guide and User guide is available</p> <p><b>Field Service Manager integration E2E scenario</b></p>  <p>This is where the integration plugs in an end-to-end scenario</p>                                                                               |
| <p>Notes: Teamviewer have own SAP FSM tenant</p>                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                           |

| Integration with SAP Solution – SAP Service and Asset Manager |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Which SAP Solutions does your software integrate?</p>      | <p><input checked="" type="checkbox"/> SAP Service and Asset Manager</p> <p>Version used during testing - 2405</p> <p><input checked="" type="checkbox"/> Other</p> <p>List SAP application &amp; version: SAP Document Management Service (DMS)</p>                                                                                                                                                                                                                                                                                                                                                                                 |
| <p>Scope of integration</p>                                   | <ul style="list-style-type: none"> <li>• We have integrated xAssist and xInspect.</li> <li>• The integration is visible to users via an extension (CIM) of the SAM mobile application where we have added extra menus/options.</li> <li>• For xAssist <ul style="list-style-type: none"> <li>• we have added a menu option to initiate xAssist calls from the SAM mobile app.</li> <li>• We can create any required logic on which expert the call is routed to, using SAP data (e.g. based on which asset it is being repaired, who the technician is, the team he belongs to, etc.)</li> </ul> </li> <li>• For xInspect</li> </ul> |

|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                              | <ul style="list-style-type: none"> <li>We seamlessly generate a QR code in the SAM mobile app that can be scanned by the smartglasses to start the right AR workflow for the equipment the technician is maintaining.</li> <li>All reports are again uploaded to SAP DMS system (or can be any other system)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| List all the file names included in the application, which are needed to integrate with SAP cloud solution (or provide as attachment).       | The integration requires Frontline Command Center and Connector + Modification to MobileService + Metadata changes (via CIM, available as a zip file)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| APIs used                                                                                                                                    | <p>DMS Access Token (SAM integration)<br/>see: Connecting Your Own Repository to Document Management Service, Integration Option / Generate a JSON Web Token<br/><a href="https://help.sap.com/docs/DOCUMENT_MANAGEMENT/f6e70dd4bffa4b65965b43feed4c9429/bff9fd6addce47f3975442a768970d32.html?locale=en-US">https://help.sap.com/docs/DOCUMENT_MANAGEMENT/f6e70dd4bffa4b65965b43feed4c9429/bff9fd6addce47f3975442a768970d32.html?locale=en-US</a> )</p> <p>DMS via CMIS (SAM integration)<br/>See: Connecting Your Own Repository to Document Management Service, Integration Option / Generate a JSON Web / Access Your Repository<br/><a href="https://help.sap.com/docs/DOCUMENT_MANAGEMENT/f6e70dd4bffa4b65965b43feed4c9429/db20ee0e90dd4546845de19cf3c758dc.html?locale=en-US">https://help.sap.com/docs/DOCUMENT_MANAGEMENT/f6e70dd4bffa4b65965b43feed4c9429/db20ee0e90dd4546845de19cf3c758dc.html?locale=en-US</a><br/>We are following the guide for setting up Apache Chemistry to access the repository; see:<br/><a href="https://help.sap.com/docs/DOCUMENT_MANAGEMENT/f6e70dd4bffa4b65965b43feed4c9429/9834cacc3de242c3bedb8a6a7530984b.html?locale=en-US">https://help.sap.com/docs/DOCUMENT_MANAGEMENT/f6e70dd4bffa4b65965b43feed4c9429/9834cacc3de242c3bedb8a6a7530984b.html?locale=en-US</a></p> <p>DMS, Integration Option API:</p> <ul style="list-style-type: none"> <li>- Authentication: Request JWT from authentication endpoint (using client credentials, /basic authentication)</li> <li>- CMIS Requests (Browser Binding): Access Repository using JWT authentication (Bearer Token).</li> </ul> |
| User Authentication Method                                                                                                                   | <p>User is not authenticated by the integration but leverages the existing authentication from BTP to obtain access.<br/>Note: DMS is accessed by service account, not by user.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Does your solution provide offline support?                                                                                                  | <p>No<br/>Due to limitations in MDK our solution requires a connection to our backend to provide functionality.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Does the application deliver a separate mobile User Interface client?                                                                        | <p>No<br/>We integrate directly into Asset Manager via Metadata (CIM)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Is your solution extensible by customers?                                                                                                    | <p>Yes<br/>The SSAM extension (CIM) can be modified by customers directly. In addition there are several customizations that customers can do through the FCC on the Business logic. But we recommend that customers work with TeamViewer on requirements and changes.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p>Does your solution modify any screens of the SAP solution?</p> <p>Please provide brief description of the reason for the modification</p> | <p>Yes<br/>Provide list: WorkOrderDetails, EquipmentDetails</p> <p>User interaction is required to activate functionality provided by the integration.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

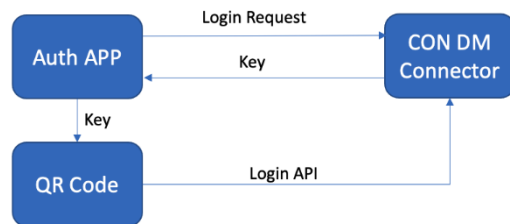
|                                                                                                                                                                                      |                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Do you use App-to-App outbound deep link plug-in to trigger your solution from the SAP solution?                                                                                     | No                                                                                                                                                                                                                                       |
| Do you use App-to-App inbound deep link plug-in to trigger SAP solution functions from your solution?                                                                                | No                                                                                                                                                                                                                                       |
| Does your integration plug-in follow SAP's custom meta data extension best practice by using <a href="#">Reusable Component Mobile Development Kit (link)</a> project and CIM files? | <input checked="" type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No<br>Explain:                                                                                                                                            |
| Please list the Component Mobile Development Kit Projects used.                                                                                                                      |                                                                                                                                                                                                                                          |
| Do you require a specific setup or configuration steps in the SAP solution to interoperate with your solution? If yes, this must be documented.                                      | <input type="checkbox"/> No<br><input checked="" type="checkbox"/> Yes<br>Explain: We require specific additional destinations in the used MobileService instance to communicate with our endpoint.                                      |
| Please indicate any technical challenges or limitations encountered during development of integration with the SAP solution, if any.                                                 | Comments: It was challenging to understand how the interaction with the oData provided by the PM module is done or needs to be adapted if the PM version of Asset Manager does not match the MDK project and/or the application version. |
| Does your solution read data directly from SAP system?                                                                                                                               | No                                                                                                                                                                                                                                       |
| Does your solution update data directly in the SAP system?                                                                                                                           | Yes<br>The solution writes reports (from calls) to DMS storage.                                                                                                                                                                          |
| Where does the application host?                                                                                                                                                     | SAP BTP / Kyma                                                                                                                                                                                                                           |
| Does the application write logs to help operators to analyze, debug and solve error situations?                                                                                      | <input checked="" type="checkbox"/> yes<br>Provide links to documents explaining how to access and analyze your application logs.<br><br><input type="checkbox"/> no<br>Explain: See Frontline manual for administrative guidance.       |



### Integration with SAP Solution – SAP Digital Manufacturing

SAP Integration and Certification Center (SAP ICC)



| Which SAP Solutions does your software integrate and used during testing? | <input checked="" type="checkbox"/> SAP Digital Manufacturing<br>Version during testing: 2405                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----|---------|---|-------------|----|---|--------|----|---|--------------|----|---|-----|----|---|---------------------|----|---|-----------------|----|---|-----|----|---|-------|----|---|---------|----|----|----------|----|----|----------|----|----|------|----|----|--------------------------|----|----|------------------|----|----|-----------------------|----|
| Additional component required                                             | SAP Document Management Service (DMS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| Approach                                                                  | The integration requires Frontline Command Center, Frontline Connector + Con DM Connector + SAP DM APIs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| SAP APIs used                                                             | <p><a href="https://api.sap.com/package/SAPDigitalManufacturingCloud/rest">https://api.sap.com/package/SAPDigitalManufacturingCloud/rest</a> →</p> <table><thead><tr><th>Nr.</th><th>API</th><th>Version</th></tr></thead><tbody><tr><td>1</td><td>workcenters</td><td>v2</td></tr><tr><td>2</td><td>groups</td><td>v1</td></tr><tr><td>3</td><td>measurements</td><td>v1</td></tr><tr><td>4</td><td>log</td><td>v1</td></tr><tr><td>5</td><td>nonconformancecodes</td><td>v1</td></tr><tr><td>6</td><td>nonconformances</td><td>v1</td></tr><tr><td>7</td><td>log</td><td>v1</td></tr><tr><td>8</td><td>start</td><td>v1</td></tr><tr><td>9</td><td>signoff</td><td>v1</td></tr><tr><td>10</td><td>complete</td><td>v1</td></tr><tr><td>11</td><td>worklist</td><td>v1</td></tr><tr><td>12</td><td>boms</td><td>v1</td></tr><tr><td>13</td><td>attachedworkinstructions</td><td>v1</td></tr><tr><td>14</td><td>workinstructions</td><td>v1</td></tr><tr><td>15</td><td>workinstructions/file</td><td>v1</td></tr></tbody></table> | Nr.     | API | Version | 1 | workcenters | v2 | 2 | groups | v1 | 3 | measurements | v1 | 4 | log | v1 | 5 | nonconformancecodes | v1 | 6 | nonconformances | v1 | 7 | log | v1 | 8 | start | v1 | 9 | signoff | v1 | 10 | complete | v1 | 11 | worklist | v1 | 12 | boms | v1 | 13 | attachedworkinstructions | v1 | 14 | workinstructions | v1 | 15 | workinstructions/file | v1 |
| Nr.                                                                       | API                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Version |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 1                                                                         | workcenters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | v2      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 2                                                                         | groups                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 3                                                                         | measurements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 4                                                                         | log                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 5                                                                         | nonconformancecodes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 6                                                                         | nonconformances                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 7                                                                         | log                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 8                                                                         | start                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 9                                                                         | signoff                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 10                                                                        | complete                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 11                                                                        | worklist                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 12                                                                        | boms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 13                                                                        | attachedworkinstructions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 14                                                                        | workinstructions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| 15                                                                        | workinstructions/file                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | v1      |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| Authentication                                                            | <p>User authentication is achieved through a simple web application which is generated after the authentication to SAP DM. The token provided by SAP DM is stored in the connector, it has a validity time, and it is identified by a unique key. This unique key is used to generate a QR Code with is also used as the authentication key for the connector.</p> <div><pre>graph LR     AuthAPP[Auth APP] -- Login Request --&gt; CONDMConnector[CON DM Connector]     CONDMConnector -- Key --&gt; AuthAPP     AuthAPP -- Key --&gt; QRCode[QR Code]     QRCode -- Login API --&gt; CONDMConnector</pre></div> <p>User Authentication is achieved through a simple web application which provides a QR code after authenticating the user with BTP. The QR code content provided by the UI is the key for accessing all the services that are built on SAP DMC.</p>                                                                         |         |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |
| Scope                                                                     | <p>We have integrated xMake.</p> <ul style="list-style-type: none"><li>For xMake<ul style="list-style-type: none"><li>The integration is accessible to an <i>operator</i> by first generating a QR code from simple web application after authenticating with SAP DM.</li><li>The Operator then scans this code from inside the Frontline Application running on Smartglasses. A specific Frontline xMake AR</li></ul></li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |     |         |   |             |    |   |        |    |   |              |    |   |     |    |   |                     |    |   |                 |    |   |     |    |   |       |    |   |         |    |    |          |    |    |          |    |    |      |    |    |                          |    |    |                  |    |    |                       |    |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Workflow uses the code to fetch data for the assembly line operator.</p> <ul style="list-style-type: none"> <li>• A list of SFCs to choose from is presented to the operator to choose directly on their Smartglass. Starting an SFC automatically retrieves all work instructions and material data referenced by the SFC.</li> <li>• Work instructions are shown step-by-step in the Smartglass and the voice-controlled user interface allows for hands-free manufacturing.</li> <li>• A Data collection step within workflow synchronizes data back to DMC for quality control purposes.</li> <li>• Non-Conformance codes can also be triggered via voice controlled menus and the outcome (e.g. scrapping) is handled by the integration.</li> </ul> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Integration with SAP Solution – SAP Extended Warehouse Management         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Which SAP Solutions does your software integrate and used during testing? | <input checked="" type="checkbox"/> SAP S/4HANA 2022 On Premise with embedded EWM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Integration Protocol                                                      | SAP JCo and SAP IDoc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Partner interface name                                                    | FL XPICK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Scope                                                                     | Beside other solutions, TeamViewer developed an IDoc based interface upon SAP Jco. 3.0 to demonstrate the ability of satisfying SAP EWM-WCU interface.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Use cases tested                                                          | <p>Use case 1: Production Order Smart Picking<br/>Materials from a high rack storage area must be picked and transferred to production staging area, for future consumption; goods in the warehouse can be stored inside Handling Unit (pallets, boxes, ...) with a specific identification number or can be loose materials on the shelf.<br/>Four different queues have been defined in the area, one for each aisle, in order to have up to four different resources working at the same time, without overlapping.<br/>IDocs involved in this use case are:</p> <ul style="list-style-type: none"> <li>• ZWMTOID01                      Outbound                      Create warehouse task</li> <li>• /SCWM/WMTCID01              Inbound                      Confirm warehouse task</li> <li>• /SCWM/WMCAID01              Inbound                      Cancellation warehouse task.</li> </ul> <p>Use case 2: Smart Putaway<br/>During a multi-step Inbound process, goods are finally moved to an intermediate area before the final putaway; here HU must be picked and transferred to an high rack storage area, each HU in a specific bin.<br/>IDocs involved in this use case are:</p> <ul style="list-style-type: none"> <li>• ZWMTOID01                      Outbound                      Create warehouse task</li> <li>• /SCWM/WMTCID01              Inbound                      Confirm warehouse task</li> <li>• /SCWM/WMCAID01              Inbound                      Cancellation warehouse task.</li> </ul> <p>Use case 3: Outbound Delivery Smart Picking</p> |

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                        |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
|                                           | <p>Materials from a high rack storage area must be picked and transferred to goods issue area, for future load on transportation unit and shipment; goods in the warehouse can be stored inside Handling Unit (pallets, boxes, ...) with a specific identification number or can be loose materials on the shelf. Four different queues have been defined in the area, one for each aisle, in order to have up to four different resources working at the same time, without overlapping.</p> <p>IDocs involved in this use case are:</p> <ul style="list-style-type: none"><li>• ZWMTOID01                      Outbound              Create warehouse task</li><li>• /SCWM/WMTCID01              Inbound              Confirm warehouse task</li><li>• /SCWM/WMCID01              Inbound              Cancellation warehouse task.</li></ul> <p>Use case 4: Unplanned Smart Movement</p> <p>Handling Units in a high rack storage area must be moved from source bins to destination bins; the transfer activities are not planned and are not connected to any warehouse request documents; they are started by the Warehouse Operator himself. No queues involved.</p> <p>OR:</p> <p>the Warehouse Operator is asked to move some HUs from storage area to goods issue area without any request documents; the documents will be created later. No queues involved.</p> <p>IDocs involved in this use case are:</p> <ul style="list-style-type: none"><li>• /SCWM/WMSUID01              Inbound              Move handling unit.</li></ul> <p>Use case 5: Smart Block Bin</p> <p>During normal operations, Warehouse Operator realizes that a specific bin is no more usable (for example because the shelf has broken) and he wants to declare it as unavailable in EWM so that no more tasks from (or to) that bin will be created. Using smart vision device, by scanning the Bin label can accomplish this.</p> <p>IDocs involved in this use case are:</p> <ul style="list-style-type: none"><li>• /SCWM/WMBIID01                                      Inbound              Block storage bins.</li></ul> |                                                                        |
| Technical Test Cases                      | Mass Processing of Incoming IDOC - OK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                        |
| Custom development                        | <p>namespace - /teamv/*.</p> <p>Content of package /TEAMV/DEV_PACKAGE (EWM - Frontline Teamviewer Development Package)</p> <p>All custom objects are packaged as TR for now.</p> <p>All these objects are for reading data. No write back.</p> <p>Teamviewer owns the responsibility to implement the Transports (TR)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |
| Notes:                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                        |
| Object list provided by partner           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                        |
| Tables:                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                        |
| /TEAMV/C_CONFIRM Confirmation Flags       | EWM-FL: Customizing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Table to control verification fields during confirmation process in FL |
| /TEAMV/C_DMS_INT parameters configuration | EWM-FL: DMS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Table to manage parameters relevant to images transfer                 |

|                                                   |                     |                                                                      |
|---------------------------------------------------|---------------------|----------------------------------------------------------------------|
| /TEAMV/C_EXCEPT<br>exception codes                | EWM-FL: Customizing | Table to list supported exception codes in FL                        |
| /TEAMV/C_OPTYPE<br>Operation Type                 | EWM-FL: Customizing | Table to control process flow during confirmation process in FL      |
| /TEAMV/C_PARAMS<br>global parameters              | EWM-FL: Customizing | Table to manage global information to be provided to FL at login     |
| /TEAMV/C_USERCNV<br>FL User conversion (optional) | EWM-FL: Customizing | Table to manage users/resources conversion for incoming data from FL |
| /TEAMV/DMS_MEM<br>retrieving memory               | EWM-FL: DMS         | Table to manage batch transfer of images from EWM to TV              |

**Table Types:**

|                                                           |              |                                    |
|-----------------------------------------------------------|--------------|------------------------------------|
| /TEAMV/TT_HUITM<br>details - item data information TABLE  | EWM-FL: HU   | Used to implement Function Modules |
| /TEAMV/TT_MATIMAGE<br>DMS format BASE64                   | Table type : | Used to implement Function Modules |
| /TEAMV/TT_MATSTOCK<br>stock details - product stock TABLE | EWM-FL:      | Used to implement Function Modules |

**Structures:**

|                                                               |             |                                                      |
|---------------------------------------------------------------|-------------|------------------------------------------------------|
| /TEAMV/E1LTORH<br>Wh.Order extension                          | EWM-FL:     | Structure used in extension segment to standard IDOC |
| /TEAMV/E1LTORI<br>creation task item extension                | EWM-FL:     | Structure used in extension segment to standard IDOC |
| /TEAMV/GL_PARAMS<br>Wh.Number global parameters structure     | EWM-FL:     | Used to implement Function Modules                   |
| /TEAMV/S_HUHDR<br>details - header data information           | EWM-FL: HU  | Used to implement Function Modules                   |
| /TEAMV/S_HUITM<br>details - item data information             | EWM-FL: HU  | Used to implement Function Modules                   |
| /TEAMV/S_MATIMAGE<br>IMG format base64                        | Structure : | Used to implement Function Modules                   |
| /TEAMV/S_MATNR<br>product details - general data              | EWM-FL:     | Used to implement Function Modules                   |
| /TEAMV/S_MATSTOCK<br>stock details - product data information | EWM-FL:     | Used to implement Function Modules                   |

**Data Elements:**

|                                      |                        |                                    |
|--------------------------------------|------------------------|------------------------------------|
| /TEAMV/EXC_FLCODE<br>code            | EWM-FL: FL exception   | Used to implement Function Modules |
| /TEAMV/FCONFIRM<br>flag array        | EWM-FL: Confirmation   | Used to implement Function Modules |
| /TEAMV/FL_USER                       | EWM-FL: FL User Id     | Used to implement Function Modules |
| /TEAMV/LAST_DATE_EXP<br>images (GMT) | Last date of export    | Used to implement Function Modules |
| /TEAMV/MAX_IMG<br>images             | Maximum number of      | Used to implement Function Modules |
| /TEAMV/OPTYPE                        | EWM-FL: Operation type | Used to implement Function Modules |

**Domains:**

|                                            |                        |                                                                    |
|--------------------------------------------|------------------------|--------------------------------------------------------------------|
| /TEAMV/EXC_FLCODE<br>Exception code domain | EWM-FL: FrontLine      | List of possible execption codes maintained in EWM-FL solution     |
| /TEAMV/OPTYPE<br>domain                    | EWM-FL: Operation type | List of possible operation types that control execution flow in FL |

| Classes:                    |                                                                                                |                                                                                                                                                     |
|-----------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|                             | /TEAMV/CL_ASR_ERROR_IN                                                                         | Implements method /SCWM/IF_EX_ASR_ERROR_IN~INBOUND; see specific enhancement implementation                                                         |
|                             | /TEAMV/CL_ASR_WMBBIN_IN                                                                        | Implements method /SCWM/IF_EX_ASR_WMBBIN_IN~INBOUND; see specific enhancement implementation                                                        |
|                             | /TEAMV/CL_ASR_WMCATO_IN                                                                        | Implements method /SCWM/IF_EX_ASR_WMCATO_IN~INBOUND; see specific enhancement implementation                                                        |
|                             | /TEAMV/CL_ASR_WMCATO_OUT                                                                       | Implements method /SCWM/IF_EX_ASR_WMCATO_OUT~OUTBOUND; see specific enhancement implementation                                                      |
|                             | /TEAMV/CL_ASR_WMSUMO_IN                                                                        | Implements method /SCWM/IF_EX_ASR_WMSUMO_IN~INBOUND; see specific enhancement implementation                                                        |
|                             | /TEAMV/CL_ASR_WMTOCO_IN                                                                        | Implements method /SCWM/IF_EX_ASR_WMTOCO_IN~INBOUND; see specific enhancement implementation                                                        |
|                             | /TEAMV/CL_ASR_WMTORD_OUT                                                                       | Implements method /SCWM/IF_EX_ASR_WMTORD_OUT~OUTBOUND; see specific enhancement implementation                                                      |
| Enhancement Implementation: |                                                                                                |                                                                                                                                                     |
|                             | /TEAMV/EX_ASR_ERROR_IN      EWM-FL: IDoc<br>Inbound Error Handling                             | Additional functionalities when an error is raised during inbound IDOC processing                                                                   |
|                             | /TEAMV/EX_ASR_WMBBIN_IN      EWM-FL: IDoc<br>Inbound Lock Storage Bin                          | Additional functionalities and conversions when receiving a block/unblock IDOC                                                                      |
|                             | /TEAMV/EX_ASR_WMCATO_IN      EWM-FL: IDoc<br>Inbound: Cancel Warehouse Task                    | Additional functionalities and conversions when receiving a cancellation task IDOC                                                                  |
|                             | /TEAMV/EX_ASR_WMCATO_OUT      EWM-FL: IDoc<br>Outbound: Cancel Warehouse Task                  | Additional functionalities and conversions when sending a task cancellation request IDOC                                                            |
|                             | /TEAMV/EX_ASR_WMSUMO_IN      EWM-FL: IDoc<br>Inbound: Move HU                                  | Additional functionalities and conversions when receiving a HU confirmation task IDOC                                                               |
|                             | /TEAMV/EX_ASR_WMTOCO_IN      EWM-FL: IDoc<br>Inbound: Confirm Warehouse Task                   | Additional functionalities and conversions when receiving a task confirmation IDOC                                                                  |
|                             | /TEAMV/EX_ASR_WMTORD_OUT      EWM-FL: IDoc<br>Outbound: Create Warehouse Task                  | Additional functionalities and conversions when sending an order to FL, with /SCWM/WMTOID01 IDOC; additional segments are created and data provided |
|                             | /TEAMV/SCWM_TO_CANCEL      EWM-FL: inb. IDoc<br>Task cancellation - fm /SCWM/TO_CANCEL enhanc. | Enhancement to FM /SCWM/TO_CANCEL in order to manage task cancellation with required exception code                                                 |
| Function Groups:            |                                                                                                |                                                                                                                                                     |
|                             | /TEAMV/C_CONFIRM      Extended Table<br>Maintenance (Generated)                                | Automatically generated by table view maintenance of a /TEAMV/ table                                                                                |
|                             | /TEAMV/C_DMS_INT      Extended Table<br>Maintenance (Generated)                                | Automatically generated by table view maintenance of a /TEAMV/ table                                                                                |
|                             | /TEAMV/C_EXCEPT      Extended Table<br>Maintenance (Generated)                                 | Automatically generated by table view maintenance of a /TEAMV/ table                                                                                |

|                           |                                                                              |                       |                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------|------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | /TEAMV/C_OPTYPE<br>Maintenance (Generated)                                   | Extended Table        | Automatically generated by table view maintenance of a /TEAMV/ table                                                                                                                                                                                                                                                                               |
|                           | /TEAMV/C_PARAMS<br>Maintenance (Generated)                                   | Extended Table        | Automatically generated by table view maintenance of a /TEAMV/ table                                                                                                                                                                                                                                                                               |
|                           | /TEAMV/C_USERCNV<br>Maintenance (Generated)                                  | Extended Table        | Automatically generated by table view maintenance of a /TEAMV/ table                                                                                                                                                                                                                                                                               |
|                           | /TEAMV/DMS_INTERFACE                                                         | EWM-FL: DMS interface | Includes /TEAMV/ FMs to manage image interface between EWM and TV                                                                                                                                                                                                                                                                                  |
|                           | /TEAMV/FUNCTIONS                                                             | EWM-FL: functions     | Includes /TEAMV/ FMs to exchange of information in EWM and with TV (via RFC)                                                                                                                                                                                                                                                                       |
| <b>Function Modules:</b>  |                                                                              |                       |                                                                                                                                                                                                                                                                                                                                                    |
|                           | /TEAMV/EXPORT_DIR_IMAGES<br>EWM-FL: Export DIR images                        |                       | FM ZEWMFL_EXPORT_DIR_IMAGES offers the possibility to export material image files from SAP system to TV FL Xpick application, in a periodic, automatically controlled way; this FM is remote-enabled (in order to call it from external systems). Included in /TEAMV/DMS_INTERFACE function group.                                                 |
|                           | /TEAMV/FLUSER_CONVERSION<br>EWM-FL: FL user conversion                       |                       | FM /TEAMV/FLUSER_CONVERSION can convert TV user/resource to SAP user; its use is optional. Included in /TEAMV/FUNCTIONS function group.                                                                                                                                                                                                            |
|                           | /TEAMV/IDOC_INPUT_WMSUMO<br>EWM-FL: Process IDoc WMTCID01: Move Storage Unit |                       | FM /TEAMV/IDOC_INPUT_WMSUMO is used to add functionalities (HU conversion) when receiving IDOCs of type /SCWM/WMSUID01; it calls standard FM /SCWM/IDOC_INPUT_WMSUMO. Included in /TEAMV/FUNCTIONS function group.                                                                                                                                 |
|                           | /TEAMV/READ_GLOBAL_PARAMS<br>EWM-FL: read global parameters from SAP         |                       | FM ZEWMFL_READ_GLOBAL_PARAMS offers the possibility to read the TV FL Xpick – EWM integration configuration of a warehouse (language, general user conversion, standard process type, exception details, ...); this FM is remote-enabled (in order to call it from external systems). Included in /TEAMV/FUNCTIONS function group.                 |
|                           | /TEAMV/READ_HU_DETAILS<br>EWM-FL: read HU details                            |                       | FM ZEWMFL_READ_HU_DETAILS offers the possibility to read many details of a specific HU (type, weight, bin, ...), including product packed inside the HU; this FM is remote-enabled (in order to call it from external systems). Included in /TEAMV/FUNCTIONS function group.                                                                       |
|                           | /TEAMV/READ_STOCK_INFO<br>EWM-FL: read physical stock information            |                       | FM ZEWMFL_READ_STOCK_INFO offers the possibility to read many details of a specific product (description, unit of measure, weight, batch management, ...), including stock information (quantity and bins where it is stored); this FM is remote-enabled (in order to call it from external systems). Included in /TEAMV/FUNCTIONS function group. |
| <b>Transaction codes:</b> |                                                                              |                       |                                                                                                                                                                                                                                                                                                                                                    |
|                           | /TEAMV/88000007 IMG Activity<br>/TEAMV/CUST_PARAMS                           |                       | Additional customizing branches, under EWM>Interfaces>Non-SAP systems>Frontline Integration                                                                                                                                                                                                                                                        |
|                           | /TEAMV/88000008 IMG Activity<br>/TEAMV/CUST_OPTYPE                           |                       | Additional customizing branches, under EWM>Interfaces>Non-SAP systems>Frontline Integration                                                                                                                                                                                                                                                        |
|                           | /TEAMV/88000009 IMG Activity<br>/TEAMV/CUST_CONFIRM                          |                       | Additional customizing branches, under EWM>Interfaces>Non-SAP systems>Frontline Integration                                                                                                                                                                                                                                                        |
|                           | /TEAMV/88000010 IMG Activity<br>/TEAMV/CUST_EXCEPT                           |                       | Additional customizing branches, under EWM>Interfaces>Non-SAP systems>Frontline Integration                                                                                                                                                                                                                                                        |
|                           | /TEAMV/88000011 IMG Activity<br>/TEAMV/CUST_USERCNV                          |                       | Additional customizing branches, under EWM>Interfaces>Non-SAP systems>Frontline Integration                                                                                                                                                                                                                                                        |

| Message Classes:                           |                                                                                  |
|--------------------------------------------|----------------------------------------------------------------------------------|
| /TEAMV/MSG Messages for EWM-FL application | Message Class used to store all messages that can be generated by Xpick solution |

| Security and Performance                                                   |                                                                                         |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Security Code Scan done for your application source code binaries          | <input checked="" type="checkbox"/> yes – using Veracode<br><input type="checkbox"/> no |
| Performance test for the application is done [self-declaration by partner] | <input type="checkbox"/> yes – using<br><input checked="" type="checkbox"/> no          |

#### 4. END-TO-END TEST CASES

| Functional Test cases executed during Test-Drive                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |    |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 1                                                                 | Test cases with SAP FSM <ul style="list-style-type: none"> <li>- Extension installation</li> <li>- Add the extension widget</li> <li>- Contact Presence information</li> <li>- Initiate an xAssist call to an online contact without selecting a Service Call</li> <li>- Initiate an xAssist call to an online contact after selecting a Service Call</li> <li>- Initiate an xAssist call to an offline contact after selecting a Service Call</li> <li>- Verify the Service record report is uploaded to FSM Service Call as an attachment</li> </ul> | OK |
| 2                                                                 | Test cases with SAP SAM <ul style="list-style-type: none"> <li>- Initialization of SAM mobile app</li> <li>- Initiate an xAssist call from SAM mobile app</li> <li>- Initiate xInspect workflow from SAM mobile app</li> </ul>                                                                                                                                                                                                                                                                                                                         | OK |
| 3                                                                 | Test cases with SAP Digital Manufacturing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | OK |
| 4                                                                 | Test cases with EWM (SAP S/4HANA 2022 On Premise with embedded EWM) <ul style="list-style-type: none"> <li>- Production Order Smart Picking</li> <li>- Smart Putaway</li> <li>- Outbound Delivery Smart Picking</li> <li>- Unplanned Smart Movement</li> <li>- Smart Block Bin</li> </ul>                                                                                                                                                                                                                                                              | OK |
| Notes:<br>Detailed test cases are documented in partner document. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |    |

#### 5. APPLICATION INTERFACE REGISTER

Application Interface Register (AIR) key was explained, and related information provided by the ICC consultant.

The AIR key is associated with a particular application of the partner. For more details, kindly go through information available in “Application Interface Register Adoption Guide for Partners and FAQ ([link](#))”

| Application Interface Key (AIR key)             |                                        |
|-------------------------------------------------|----------------------------------------|
| Partner Solution name                           | TeamViewer Frontline Augmented Reality |
| AIR Key Value used in API calls to SAP Solution | cxqmbckz                               |
| Implement AIR Key                               | Yes. tested                            |

#### 6. CLOUD QUALITY AND CLOUD DELIVERY REQUIREMENTS

All solutions that qualify for this Certification must fulfill the Cloud Quality and Cloud Delivery Requirements. SAP Integration and Certification Center (SAP ICC)



| Cloud Qualities and Cloud Delivery Check            |                                         |                             |                                         |
|-----------------------------------------------------|-----------------------------------------|-----------------------------|-----------------------------------------|
| Cloud Quality Requirements were met                 | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> Not Applicable |
| Cloud Delivery Requirements were met                | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> Not Applicable |
| COMMENTS: Received the checklist filled by partner. |                                         |                             |                                         |

7. SECURITY CODE SCAN ASSESSMENT

Binaries for the solution must successfully complete the Security Code Scan Check. A successful execution indicates that all the “Very High” and “High” classified security flaws have been resolved or mitigated by the partner.

| Security Code Scan Assessment                                                                            |                                                                                                            |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| All the “Very High” and “High” classified security flaws have been resolved or mitigated by the partner. | <input checked="" type="checkbox"/> yes <input type="checkbox"/> no<br>Comments: Security Code Scan Report |

|                           |                      |
|---------------------------|----------------------|
| Platform Used             | Java Platform        |
| Compiler Used             | Java Script complier |
| Assessment Date           | 16 October 2024      |
| Location                  | Bangalore            |
| Persons present - Partner | Ashish Garg and team |
| Persons present – SAP     | Prashanth Kalur      |

7.1 SCAN REPORT

A detailed scan report from the 3<sup>rd</sup> party vendor has been sent to the partner. This report specifies all the Very high, high, medium and low priority flaws along with the mitigation-by-design comments.

7.2 BINARIES LIST USED FOR THE SCAN

This assessment has been done only for the below listed binaries provided by partner. SAP cannot guarantee that it’s a complete list of binaries which is used for their product to scan.

| LIST OF BINARIES SCANNED                 |
|------------------------------------------|
| frontline-connector_dmc_1_0_3_debug.jar  |
| frontline-connector_ewm_2_1_deug_fix.jar |
| frontline-connector_fsm_3_2_5_debug.jar  |
| frontline-connector_sam_1_0_3_debug.jar  |
| frontline_4.26_debug_fix.jar             |
| JS files within con_dmc_connector.zip    |

7.3 OUTCOME OF THE SCAN

Based on the 3<sup>rd</sup> party scanned report, below is the detailed summary. The scope of the scan includes only for the binaries specified in section 2.

NUMBER OF SCANS DONE: 1 SCAN IN TOTAL.

| Flaws \ Priorities                            | Very High* | High* | Medium* | Low* |
|-----------------------------------------------|------------|-------|---------|------|
|                                               |            |       |         |      |
| No. of flaws encountered in the initial scan  | 201        | 01    | 1358    | 39   |
| No. of flaws encountered in the latest scan   | 00         | 00    | 1358    | 39   |
| No. of flaws fixed (via code change)          | 00         | 00    | 00      | 00   |
| Proposed Mitigated-by-design flaws by partner | 201        | 01    | 00      | 00   |



|                                                                                                                          |     |    |      |    |
|--------------------------------------------------------------------------------------------------------------------------|-----|----|------|----|
| No. of flaws which are mitigation-by-design (approved by partner based on review comments from 3rd party vendor and SAP) | 201 | 01 | 00   | 00 |
| No. of OPEN flaws                                                                                                        | 00  | 00 | 1358 | 39 |

\*Note: Please refer sub-section 6 to know more about the priorities.

#### 7.4 TOP RISK FLAWS DETECTED IN THE APPLICATION

Based on the 3<sup>rd</sup> party scanned report, below are the top risk flaws which are detected in the application binaries during the latest scan.

| FLAW CATEGORY                 | SEVERITY | COUNT |
|-------------------------------|----------|-------|
| AUTHORIZATION ISSUES          | MEDIUM   | 05    |
| CRLF INJECTION                | MEDIUM   | 1255  |
| CREDENTIALS MANAGEMENT        | MEDIUM   | 16    |
| CRYPTOGRAPHIC ISSUES          | MEDIUM   | 33    |
| INFORMATION LEAKAGE           | MEDIUM   | 05    |
| INSUFFICIENT INPUT VALIDATION | MEDIUM   | 29    |
| SERVER CONFIGURATION          | MEDIUM   | 14    |
| SESSION FIXATION              | MEDIUM   | 01    |
| CRYPTOGRAPHIC ISSUES          | LOW      | 04    |
| INFORMATION LEAKAGE           | LOW      | 09    |
| TIME AND STATE                | LOW      | 23    |
| CODE QUALITY                  | LOW      | 03    |

#### 7.5 ISSUES FIXED IN THE RE-SCAN

Below is the explanation provided by the partners on what are the issues and how the issues are fixed during the re-scans.

##### WHAT ARE THE ISSUES AND HOW THE ISSUES ARE FIXED?

Based on the first scan, there were 201 VH and 1H issues.

- All these issues have been mitigated by partners comments and captured in the 3rd party vendor document.

#### 7.6 PRIORITIES CATEGORIZED AFTER THE SCAN

Interpretation of the priorities for the business criticality are defined as follows. The below table constitutes how flaws are categorized.

|                      |                                                                                                                                                                                                                      |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Very High</b>     | The offending line or lines of code is a very serious weakness and is an easy target for an attacker. The code should be modified immediately to avoid potential attacks.                                            |
| <b>High</b>          | The offending line or lines of code have significant weakness, and the code should be modified immediately to avoid potential attacks                                                                                |
| <b>Medium</b>        | A weakness of average severity. These should be fixed in high assurance software. A fix for this weakness should be considered after fixing the very high and high for medium assurance software                     |
| <b>Low</b>           | This is a low priority weakness that will have a small impact on the security of the software. Fixing should be consideration for high assurance software. Medium and low assurance software can ignore these flaws. |
| <b>Very Low</b>      | Minor problems that some high assurance software may want to be aware of. These flaws can be safely ignored in medium and low assurance software.                                                                    |
| <b>Informational</b> | Issues that have no impact on the security quality of the application but which may be of interest to the reviewer.                                                                                                  |

#### 7.7 CONCLUSION

SAP Integration and Certification Center (SAP ICC)



This Security Code Scan Assessment confirms the execution of the partner product in accordance with SAP security guidelines. It does not guarantee that the product is risk-free. A successful execution indicates that all the “Very High” and “High” classified security flaws have been resolved or mitigated by the partner.

This Assessment uses static analysis techniques to discover potentially exploitable flaws. Due to the nature of software security testing, the lack of discoverable flaws does not mean the software is 100% secure. Partner is solely responsible for fixing and maintaining the solution. End customers will need to ensure their license agreement with partner addresses any possible concerns.

## 8. ADDITIONAL COMMENTS

Partner has affirmed that the information provided to SAP in the accompanying Technical Product Profile document is complete and accurate.

This SAP Certification is only valid for the SAP release and partner product release noted in this document; if SAP component or third-party product release changes SAP offers re-certification service.