

hagergroup

hagergroup

Successful custom code adaptation for S/4HANA

Hager Group case study

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Me, myself & I



- Metalhead
- Brewing & Asian kitchen enthusiast
- Guitar & Football player
- Tychy, Poland

hagergroup

- In Hager Group for 20 years
- Currently Software Development Manager
- Former ABAP Developer

SAP Community

- SAP Champion
- Former blogger
- Book author about ADT
- Creator of few Eclipse plugins and ABAP Open-Source projects

Agenda

- 01 Hager Group
- 02 Preparation for S/4HANA conversion
- 03 Execution of S/4HANA custom code adaptation
- 04 Hypercare
- 05 What would I do differently now?
- 06 Summary

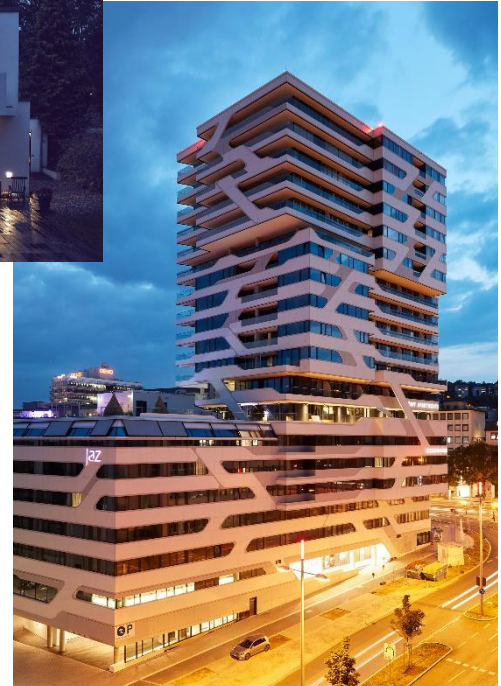
01 Hager Group

Our business

Hager Group is a leading supplier of solutions and services for electrical installations in residential, commercial and industrial buildings.



Residential buildings



Commercial buildings

Key figures

* per 31.12.2023

88

Nationalities

3.2

Billion euro
turnover in 2023

13,000

Employees

>100

Countries in which
Hager Group solutions
are available

+12.3%

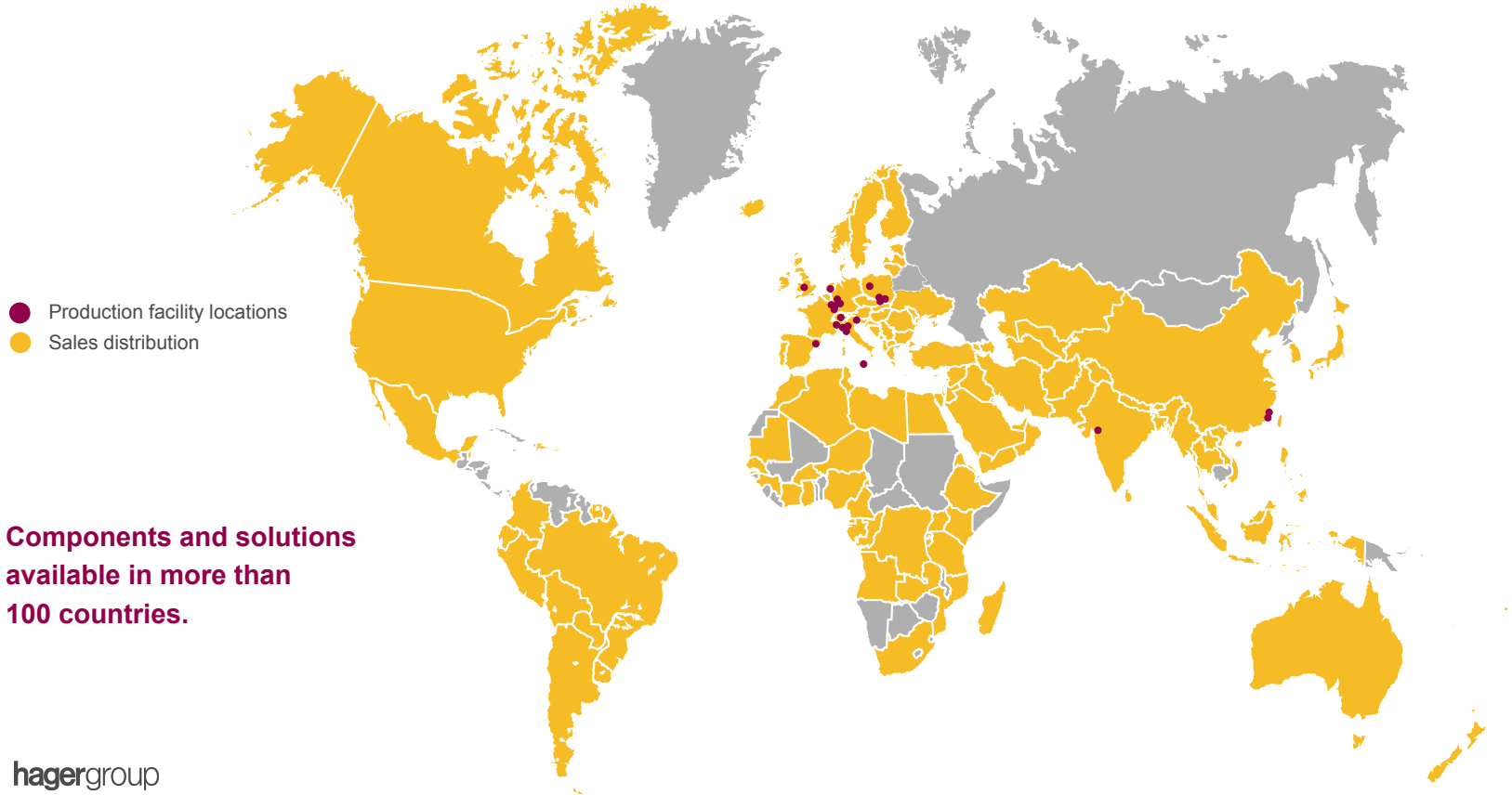
Organic Growth

22

Production facility
locations worldwide

Hager Group worldwide

Our 22 production facility locations



Our brands

The specialists

:hager

Electrical installation systems in residential, commercial and industrial buildings.



Innovative solutions for energy storage and electromobility in Germany/Switzerland.

B.
Berker

Multifaceted switch designs combined with smart building automation.



Cable management and small distribution boards for domestic and industrial applications.

ELCOM.

Modern door communication systems and individual and high-quality door station solutions.



Integrated software solutions for energy management of buildings and remote control and optimisation of energy consumption on site for commercial customers

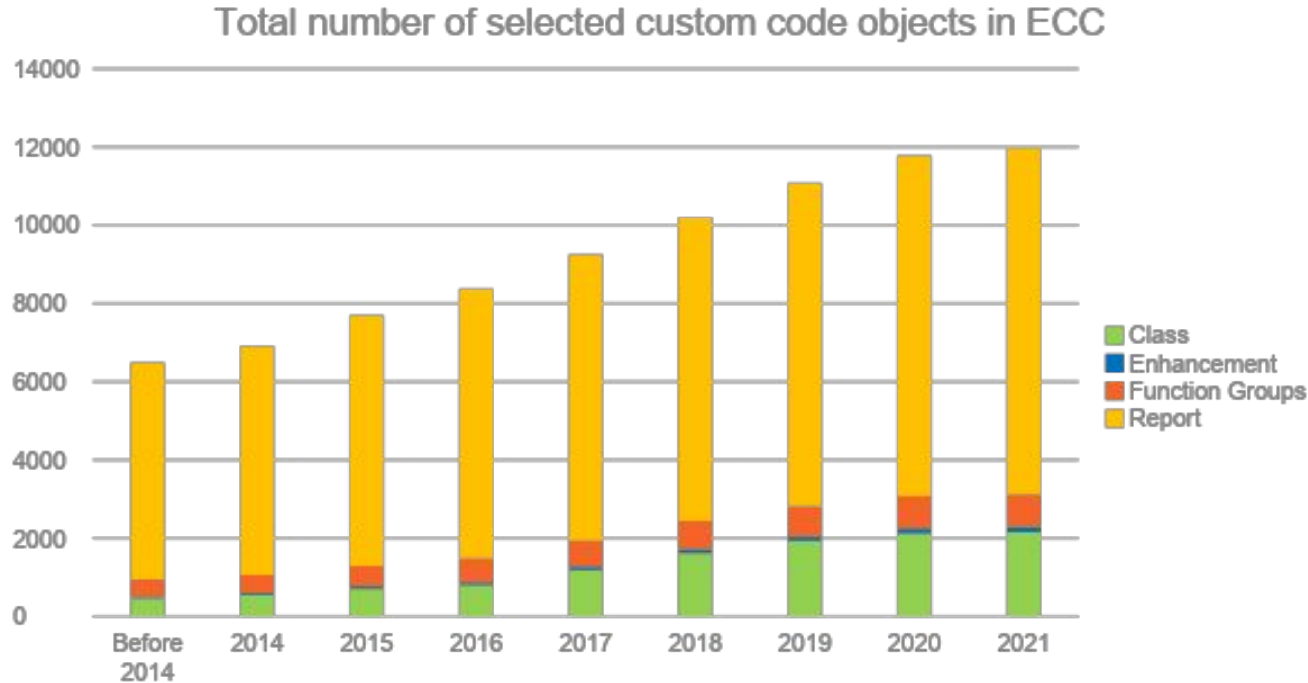
Pmflex™

Specialist and market leader of flexible and rigid conduit systems for low voltage installations in Europe.

02 Preparation for S/4HANA conversion

Custom objects in ECC

Custom Code Migration



Tools preparation

Basic setup

The screenshot displays the SAP ABAP Test Cockpit interface. The top section shows the 'Check Variant' configuration for 'ZS4HANA_READINESS_REMOTE', last changed by 'PEGLELL' on 23.08.2024. Below this, the 'Checks to Execute' section is visible, with 'Locally Available Checks' selected. A table lists various checks such as 'List of Checks', 'General Checks', 'ABAP Dictionary Checks', 'Cloud Readiness', 'Performance Checks', 'Core Data Services (CDS)', 'Security Checks', 'DDIC: DB Tables (Logging Check)', 'Critical Statements', and 'Find Specific Critical Statements'. The bottom section shows the 'ABAP Call Monitor: Data Browser' for the period 09.05.2024 - 15.05.2024 (#90.643). It displays a table of call data with columns for Call Name, Call Type, Call Processing Book Name, Class Name, Mark, Cals, and Successrate. Below the table, the 'ADZ Conversion with SUSG data' section is visible, showing project details for 'System to Be Analyzed' and 'Check Information'. The 'Analysis' section indicates that the analysis is finished with 18 findings.



- SCMON – ABAP call monitor run for 1.5 year
- Evaluation of the custom code usage on a base of STAD statistics
- ATC setup – to check S/4HANA readiness of newly created code
- Custom Code Migration Fiori App (upgrade of ATC system to S/4)

Priority assessment

Excel file based on STAD & ATC



A	B	C	D	E
# Code Lines	# ATC findings	# Screens	Key	Overall Complexity
< 1.000	< 10	< 2		
< 1.000	< 10	3 - 5		
< 1.000	< 10	6 - 10		
< 1.000	< 10	> 10		
< 1.000	11 - 50	< 2		
< 1.000	11 - 50	3 - 5		
< 1.000	11 - 50	6 - 10		
< 1.000	11 - 50	> 10		
< 1.000	51 - 100	< 2		
< 1.000	51 - 100	3 - 5		
< 1.000	51 - 100	6 - 10		
< 1.000	51 - 100	> 10		
< 1.000	101 - 250	< 2		
< 1.000	101 - 250	3 - 5		
< 1.000	101 - 250	6 - 10		
< 1.000	101 - 250	> 10		
< 1.000	251 - 500	< 2		
< 1.000	251 - 500	3 - 5		
< 1.000	251 - 500	6 - 10		
< 1.000	251 - 500	> 10		
1.000 - 5.000	< 10	< 2		
1.000 - 5.000	< 10	3 - 5		
1.000 - 5.000	< 10	6 - 10		
1.000 - 5.000	< 10	> 10		
1.000 - 5.000	11 - 50	< 2		
1.000 - 5.000	11 - 50	3 - 5		
1.000 - 5.000	11 - 50	6 - 10		

A	B	C	D	E
Overall Complexity	Usage Scope	Critical for System Load		Criticality
High	Country	Yes	High_Country_Yes	Cat 1
High	Function	Yes	High_Function_Yes	Cat 2

Classification																							
ObjectKey	Object Type	Object Name	Object Business Function	Object Parameters (ATC)	Object Criticality	Usage Information	Related Code	Executable Report?	Testable?	Combined assessment 2	Complexity	Categorization	Overall Complexity	# Code Lines	# ATC Findings	# Screens	Essential Data (Main Transactional Report)	Usage Scope	Critical to System Load	Controls	Transactional Usage	Essentiality	
PROZSDVIMHVSZSDVMSKUBERZ																							
PROZSDVSAORZSDVSAORARAR	PROG	ZSDVSAOR	Sales & Marketing	Simple order price calculation	TCS	Used	ZSDSO	TRUE	TRUE	Car 3 - VS	Will be calculated...	Will be calculated...	Will be calculated...	5.000 - 8.000	< 10	Choose One...	Choose One...	Choose One...	Choose One...	High	Cross function	Customer Request	
PROZSDVSAORZSDVSAORARAR	PROG	ZSDVCOND	Sales & Marketing	Manage priorities France	TCS	Used	ZSDTR	TRUE	TRUE	Car 3 - VS	Will be calculated...	Will be calculated...	Will be calculated...	1.000 - 8.000	11 - 50	Choose One...	Choose One...	Choose One...	Choose One...	Medium	Cross function	Efficiency	
PROZSDVCFOMZSDVCFOMCDEL	PROG	ZSDV_25	Sales & Marketing	Validation Prio	TCS	Used	ZSDV_25	TRUE	TRUE	Car 3 - VS	Will be calculated...	Will be calculated...	Will be calculated...	< 1.000	MNA	Choose One...	Choose One...	Choose One...	Choose One...	High	Single function	Efficiency	
PROZSDVAV_25ZSDVAV_SFEMM	PROG	ZSDVAV01	Sales & Marketing	Transaction Start (AV) order blocks	TCS	Used	ZV01	TRUE	TRUE	Car 3 - VS	Will be calculated...	Will be calculated...	Will be calculated...	< 1.000	MNA	Choose One...	Choose One...	Choose One...	Choose One...	High	Cross function	Efficiency	
PROZSDVAVRZSDVAVRBEETS	PROG	ZSDVAD05	Sales & Marketing	Customized logistic parameters	TCS	Used	ZFOR_05	TRUE	TRUE	Car 4 - WP	Will be calculated...	Will be calculated...	Will be calculated...	< 1.000	MNA	Choose One...	Choose One...	Choose One...	Choose One...	High	Single function	Customer Request	

Custom Code classification

Verify New SAP Fiori

- Discover
- Decide scope of usage
- Define usage profiles and roles

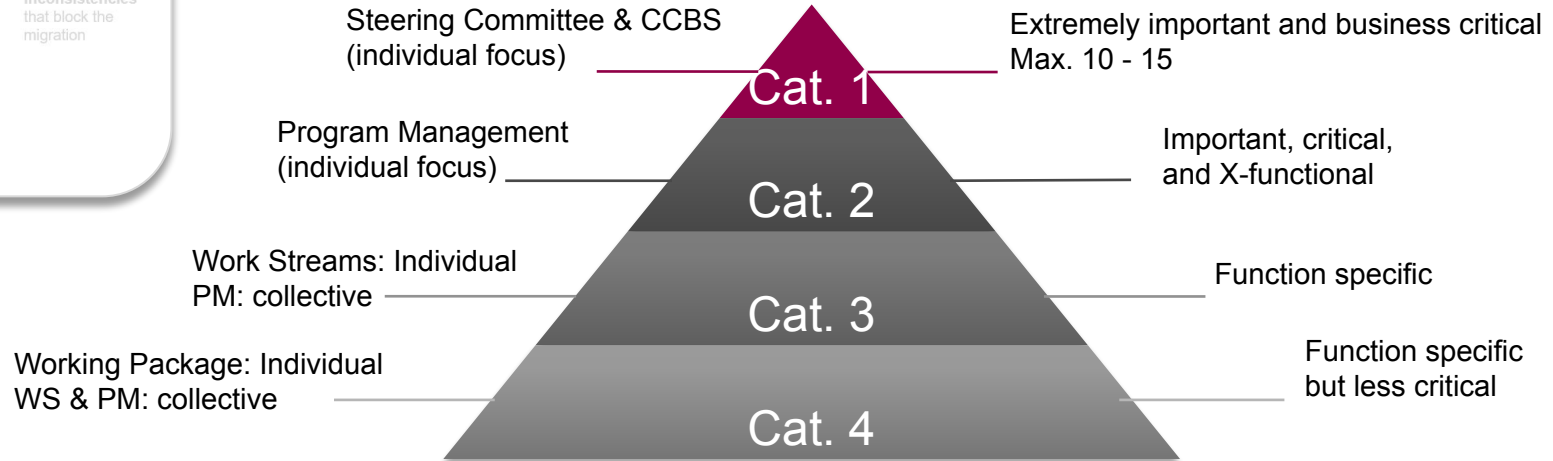
Get Hager own applications ready for S/4

- Verify what we **keep or skip**
- Adaption to S/4HANA or return to **SAP-Standard** functionality e.g. ZVAB, QIM, ZMLM
- Interfaces, e.g. CRM

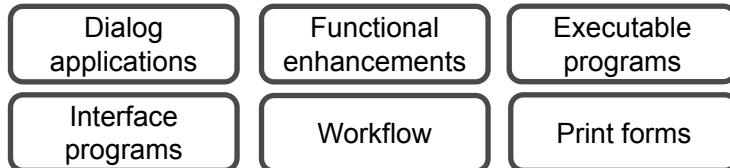
Data cleansing & archiving

Reduce data volume by archiving
Clean inconsistencies that block the migration

Enabler : Prioritize sprint activity, Focus on high value code, informed decision process (mitigation), Key filter for reporting



Custom code objects:



Unused Custom code cleaning:

2 900 executable reports.

Of which **1 100 not used** in 2021/22

To be confirmed & cleaned by WS leaders.

Exchange with Business Preparation



- Business was informed ahead
- Some of the work streams started to assess custom code at early stage
- Critical custom code was identified
- Clear explanation of Fiori strategy

External Partner selection Preparation



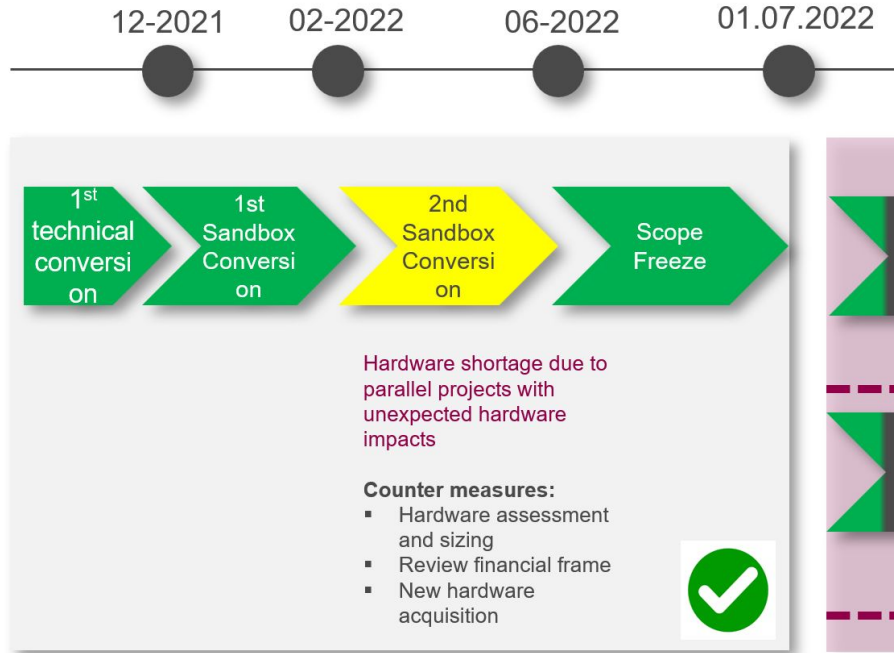
- Several discussions with external partners
- We've selected one, that can cover each part of conversion and support functionally and technically
- Time is your enemy



03 Execution of S/4HANA custom code adaptation

System copies

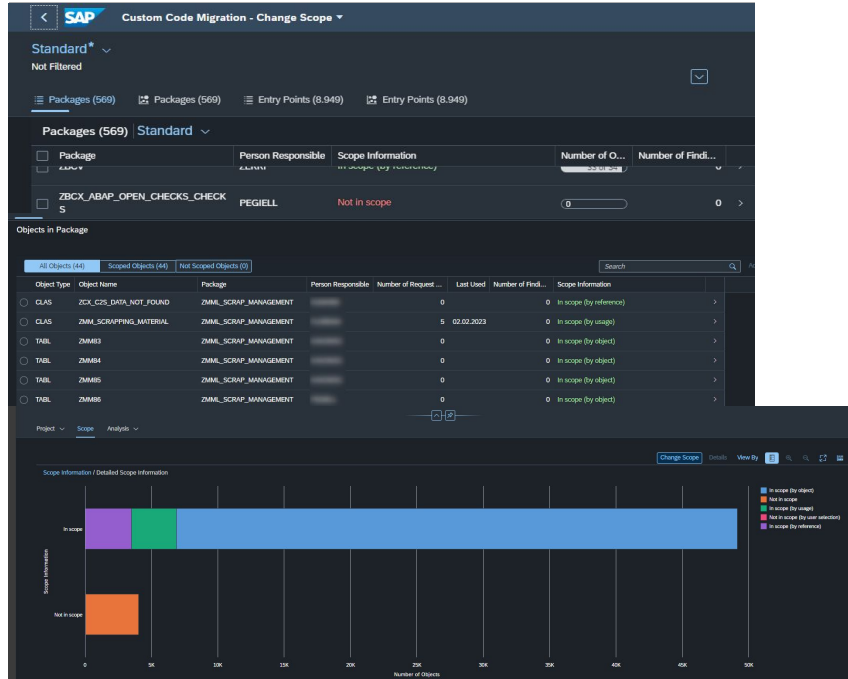
Test Conversions



- 1x technical conversion and 2x sandbox conversions before conversion of Dev system
- Technical system kept and used for development needed after S/4 conversion
- ACT_UPG, SPAU, SPDD transports created and reused
- Start of custom code adaptation on sandbox system

Scope adaptation

Custom Code Migration App

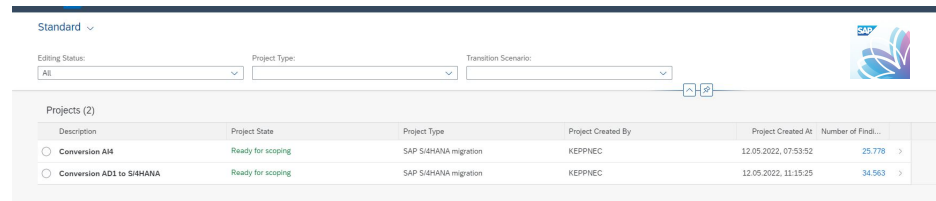


- SCMON data included
- Manual adaptation of the scope
- Add-ons exclusion
- External custom code excluded (installed through abapGit for example)

Differences in ATC findings

Custom Code Migration App

- Development system have much more ATC findings
- Open TRs and local objects are one of the reasons

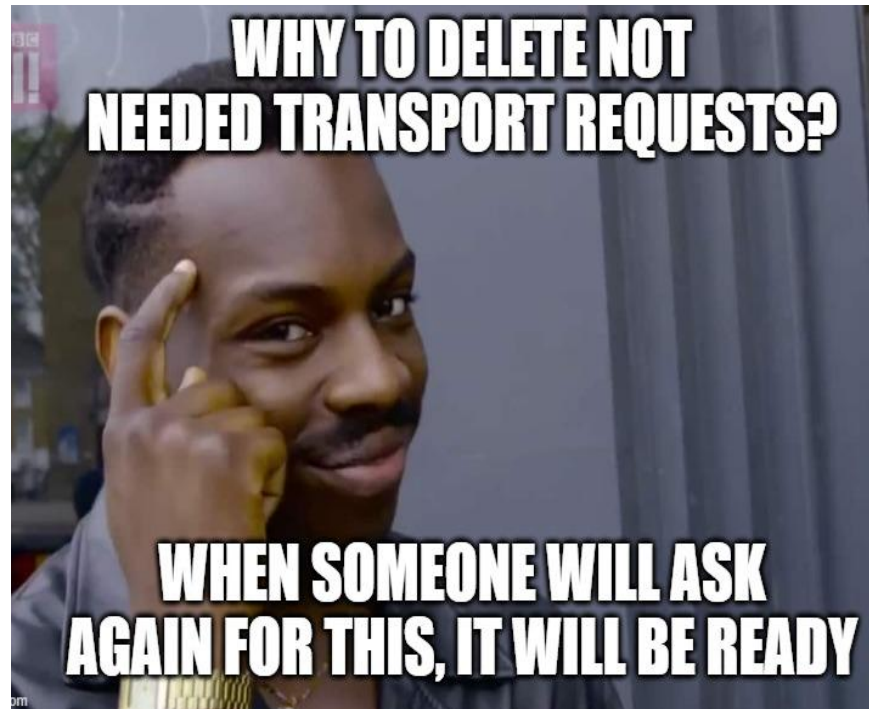


The screenshot displays the SAP Custom Code Migration App interface. At the top, there is a navigation bar with the text "Standard" and a dropdown arrow. Below this, there are three input fields: "Editing Status:" with a dropdown menu showing "All", "Project Type:" with a dropdown menu, and "Transition Scenario:" with a dropdown menu. To the right of these fields is the SAP logo and a small icon of a person. Below the input fields, there is a section titled "Projects (2)" which contains a table with the following data:

Description	Project State	Project Type	Project Created By	Project Created At	Number of Findi...
<input type="radio"/> Conversion A14	Ready for scoping	SAP S/4HANA migration	KEPPNEC	12.05.2022, 07:53:52	25.778 >
<input type="radio"/> Conversion AD1 to S/4HANA	Ready for scoping	SAP S/4HANA migration	KEPPNEC	12.05.2022, 11:15:25	34.563 >

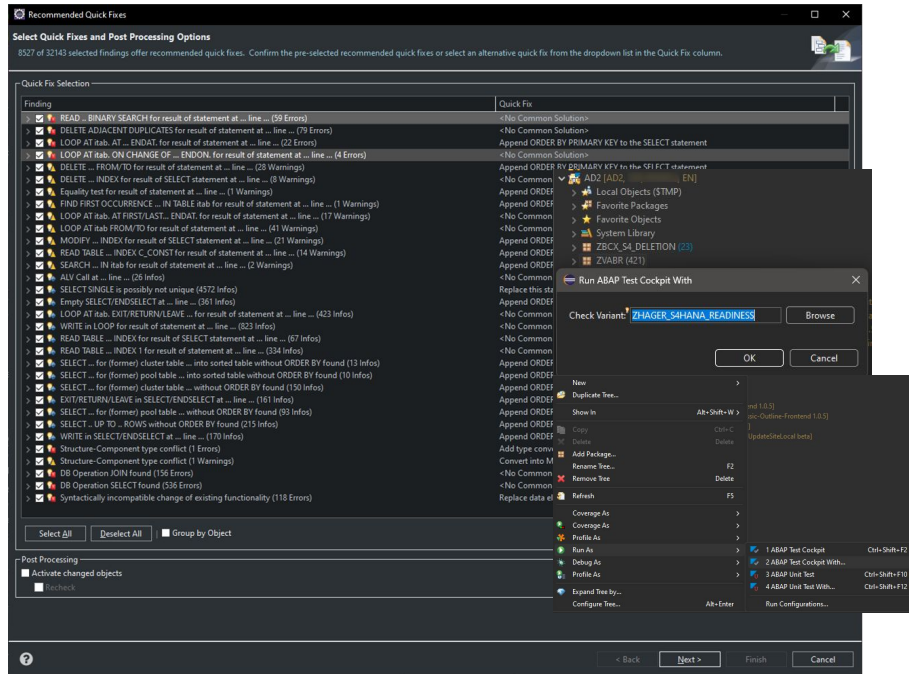
Cleaning of Transport Requests Preparation

- Many old TR still not released
- Changes not needed anymore but not reverted
- Different state of Dev system and Prod
- Inactive objects (including \$TMP package)
- Some of the owners of not released TR, already outside the company
- We need it, but I don't have time to test



Mass processing of Automatic Quick Fixes

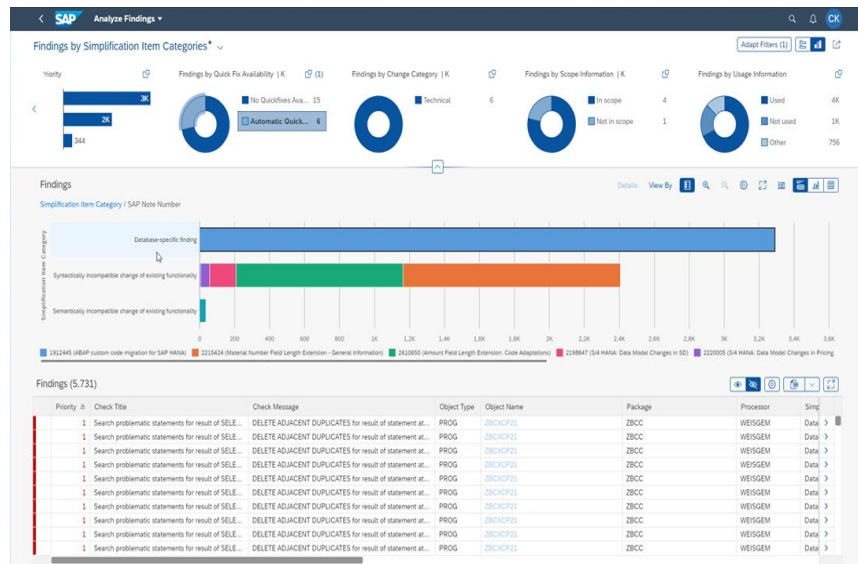
Custom code adaptation



- Converted sandbox used
- Maximum one package at time
- Only in ABAP Development Tools

Mass processing of Automatic Quick Fixes

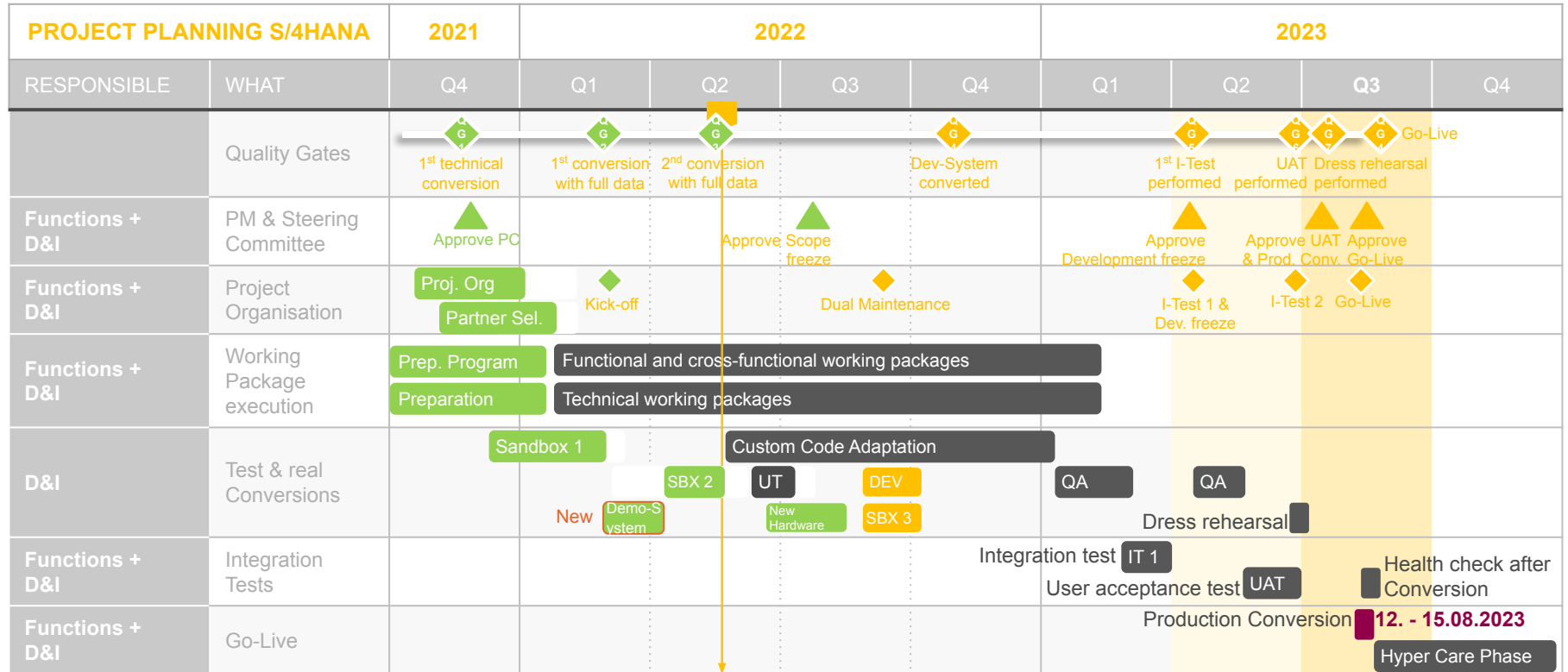
Custom code adaptation



- Only for ATC findings with recommended quick fixes
- Custom Code Migration app will still show Automatic Quick Fixes Allowed
- Automatic Quick Fixes can be used manually in ADT

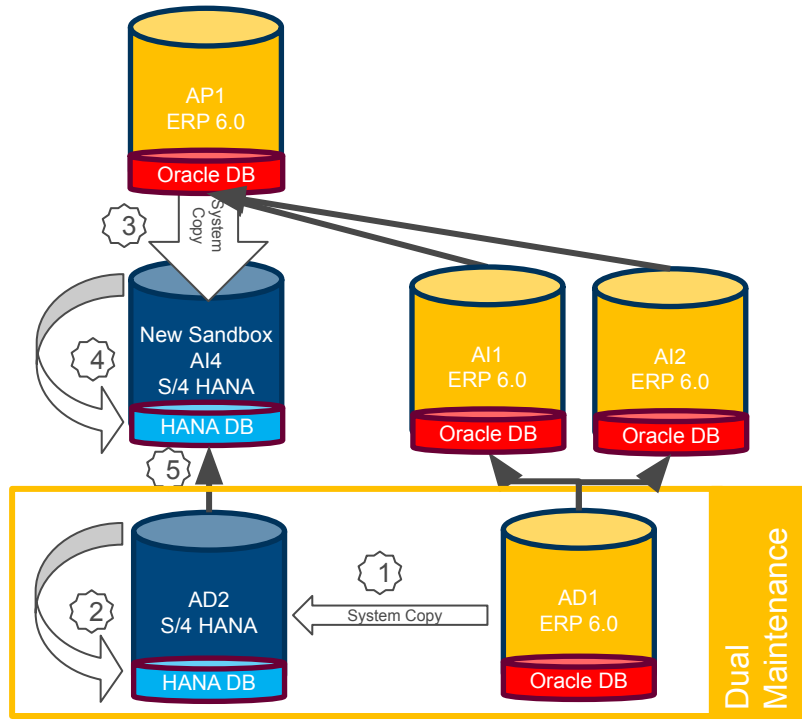
Actualized plan

S/4HANA conversion project



System Landscape

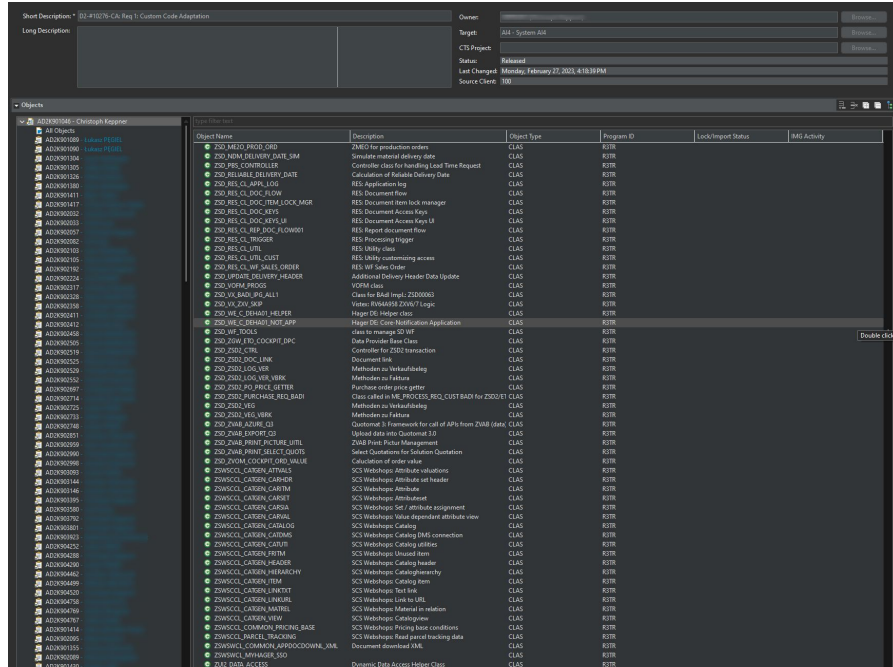
Dual Maintenance



- 1 System Copy AD1 to **AD2**
- 2 Conversion **AD2** to S/4HANA
(Dual Maintenance Start, Transport Route Change)
-> **Future DEV-System for S/4HANA**
- 3 System Copy AP1 to AI4
- 4 Conversion AI4 to S/4HANA
- 5 Actualization of AI4 Sandbox through AD2
(regular transports)

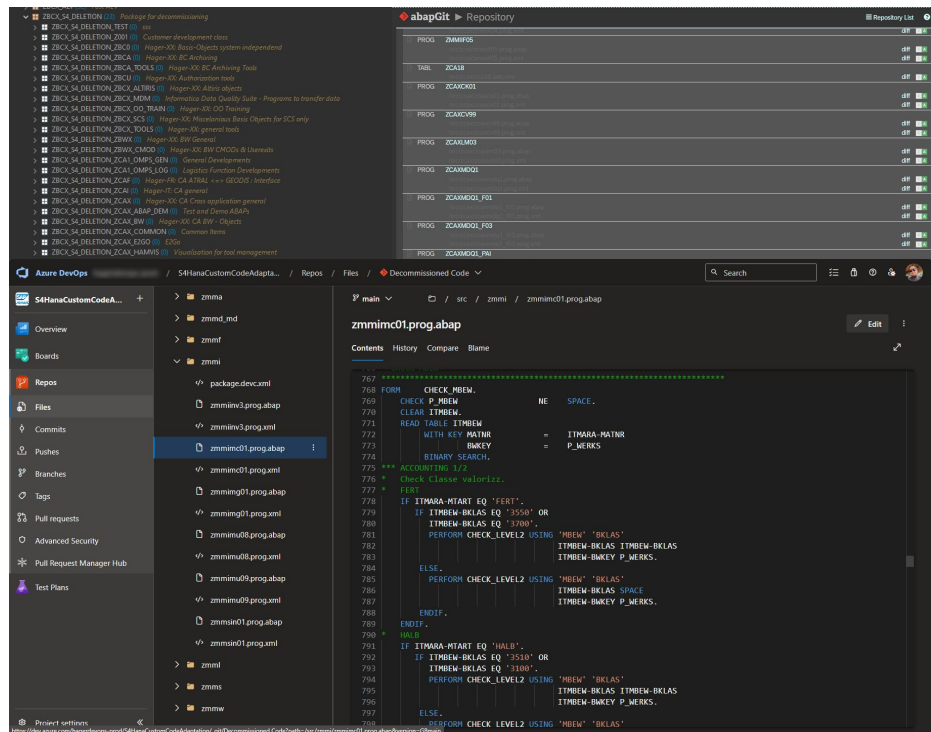
Transports setup

Dual Maintenance



- Only “few” transports on converted development system (block of TR creation to most of developers)
- Block of adapted objects on ECC system in special TRs
- Regular checks of released TRs on ECC if the dual maintenance was done

Decommissioning Custom code adaptation

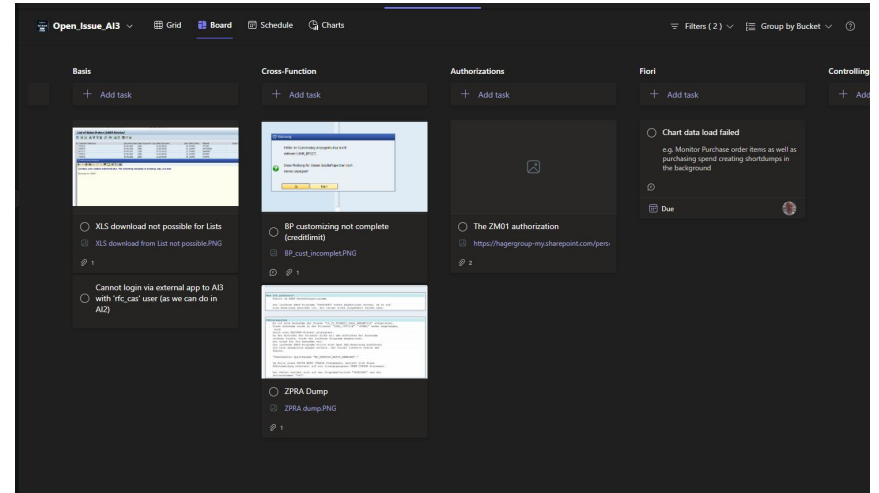


- Special package structure
- abapGit as tool to archive code
- MS DevOps Git Repository
- Quick revert
- Several iterations
- ADT used to make deletion from system

Internal tests

Sandbox conversions

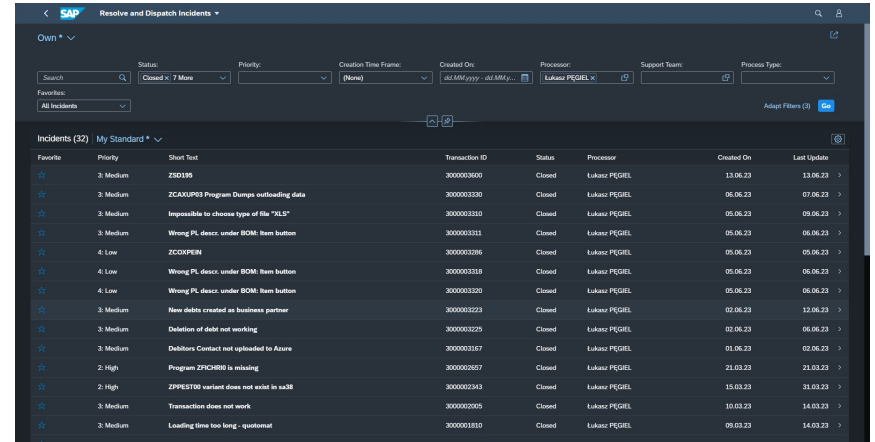
- MS Planner used to collect issues
- Hard management and follow up
- No link to test data
- Manual reporting



SolMan as incident handling tool

Integration test

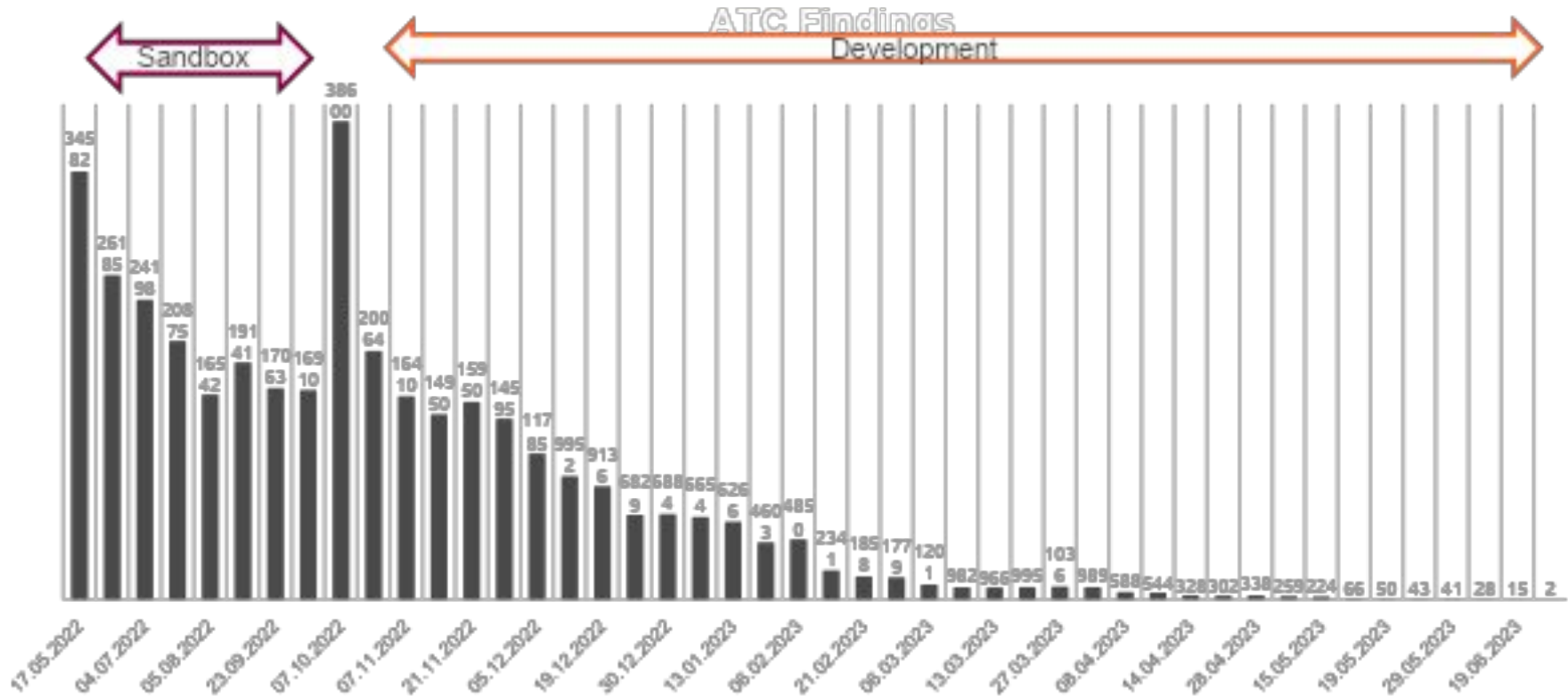
- Test plans/cards stored in SolMan
- Test plans linked to incidents
- Built-in dashboards



The screenshot shows the SAP SolMan 'Resolve and Dispatch Incidents' interface. It features a search bar, filters for status (Closed: 7 More), priority (None), creation time frame, created on date (06.06.2023 - 06.06.2023), processor (Lukasz PEGIEL), support team, and process type. Below the filters is a table of incidents with columns for Favorite, Priority, Short Text, Transaction ID, Status, Processor, Created On, and Last Update.

Favorite	Priority	Short Text	Transaction ID	Status	Processor	Created On	Last Update
	3: Medium	ZSD195	3000003600	Closed	Lukasz PEGIEL	13.06.23	13.06.23
	3: Medium	ZCAXLUP3 Program Dumps outloading data	3000003330	Closed	Lukasz PEGIEL	06.06.23	07.06.23
	3: Medium	Impossible to choose type of file "ALS"	3000003310	Closed	Lukasz PEGIEL	05.06.23	05.06.23
	3: Medium	Wrong PL desc. under BOM: Item button	3000003311	Closed	Lukasz PEGIEL	05.06.23	06.06.23
	4: Low	ZCDXPER	3000003286	Closed	Lukasz PEGIEL	05.06.23	05.06.23
	4: Low	Wrong PL desc. under BOM: Item button	3000003318	Closed	Lukasz PEGIEL	05.06.23	06.06.23
	4: Low	Wrong PL desc. under BOM: Item button	3000003320	Closed	Lukasz PEGIEL	05.06.23	06.06.23
	3: Medium	New debts created as business partner	3000003223	Closed	Lukasz PEGIEL	02.06.23	12.06.23
	3: Medium	Deletion of debt not working	3000003225	Closed	Lukasz PEGIEL	02.06.23	06.06.23
	3: Medium	Debtors Contact not uploaded to Azure	3000003167	Closed	Lukasz PEGIEL	01.06.23	02.06.23
	2: High	Program ZFICHR0 is missing	3000002857	Closed	Lukasz PEGIEL	21.03.23	21.03.23
	2: High	ZPPEST00 variant does not exist in sac8	3000002343	Closed	Lukasz PEGIEL	15.03.23	31.03.23
	3: Medium	Transaction does not work	3000002005	Closed	Lukasz PEGIEL	10.03.23	14.03.23
	3: Medium	Loading time too long - systemat	3000001810	Closed	Lukasz PEGIEL	09.03.23	14.03.23
	3: High	Class SAP Debitors Entry	3000001404	Closed	Lukasz PEGIEL	05.03.23	14.03.23

ATC findings burnout



04 Go-Live & Hypercare

Go-Live

OMG no issues!

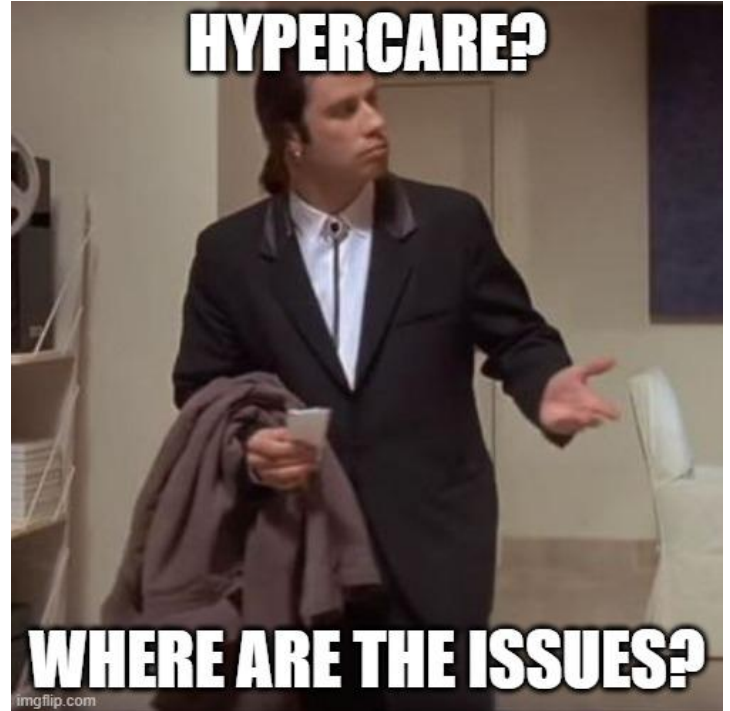
- No issues during Go-live at any phase
- TR released earlier to make sure no inactive objects are inside
- ~50 TR released in total

1	Seque	Request/Task	Type	Status of request/task	Source client	Transp ort	Short Description	Import Phase
10		AD2K900024	Workbench	Released	000	DUM	SPDD AD2 S/4-Conversion	SPDD
11		AD2K900046	Workbench	Released	000	DUM	ACT UPG: Cannot be corrected on AD1 / Corrected on AI4	ACT UPG
12		AD2K900049	Workbench	Released	000	DUM	ACT UPG: Can be corrected on AD1 / Corrected on AI4	ACT UPG
13		AD2K901025	Workbench	Released	100	AI4	S/4 Conversion after SUM -> Prepare Financial Conversion	Financial Data Migration
14		AD2K901027	Customizing	Released	100	AI4	C1-#10276-FI: Customizing Financial Data Migration	Financial Data Migration
16		AD2K901040	Workbench	Released	100	DUM	SPAU AD2 S/4-Conversion	SPAU
17	4	AD2K901046	Workbench	Released	100	AI4	D2-#10276-CA: Req 1: Custom Code Adaptation	Custom Code
18	6	AD2K901079	Customizing	Released	100	AI4	C2-#10276-CA: Req 1: Same version as on AP1	Custom Code
19	5	AD2K901081	Customizing	Released	100	AI4	C2-#10276-CA: Req 2: Version different from AP1	Custom Code
24		AD2K901252	Workbench	Released	100	DUM	M1-#10276-PP-NA/1482635-0023/VA01/CO40: Performance issues w	SPAU
25	2	AD2K901256	Customizing	Released	100	AI4	C1-#10276-SD: ZVAB S/4Hana	Custom Code
30	7	AD2K902206	Workbench	Released	100	AI4	D1-#10276-SD: ZVAB S/4Hana	Custom Code
31	6	AD2K902228	Workbench	Released	000	AI4	D1-#10276-SD: ZB31 S/4Hana	Custom Code
32	5	AD2K902240	Workbench	Released	000	AI4	D1-#10276-SD: Basis-Tools S/4Hana	Custom Code
33	1	AD2K902425	Workbench	Released	100	DUM	M1-#10276-BC: NA/2680079-0005/SAP Note implementation	Custom Code
39	9	AD2K902674	Workbench	Released	100	AI4	MES - ERP & MES common part	Custom Code
40	2	AD2K902847	Workbench	Released	100	AI4	M1-#10276-MM: 03/119201-0003/Note implementation(Task96522)	Custom Code
44		AD2K903138	Workbench	Released	100	AI4	M1-#10276-FI: 04/3284252-0002/Note impl. (Task 96841)	Financial Data Migration
49	1	AD2K903425	Customizing	Released	000	AI4	ALV Excel Templates	Custom Code
50		AD2K903455	Workbench	Released	100	AI4	D2-#10276-BC: ACT UPG AI1 Objects	ACT UPG
51		AD2K903467	Workbench	Released	100	AI4	D2-#10276-BC: ACT UPG on AI2 round 2	ACT UPG
52		AD2K903470	Workbench	Released	100	AI4	D2-#10276-BC: ACT UPG on AI1 round 3	ACT UPG
53	1	AD2K903630	Workbench	Released	100	AI4	SAP Note 3144349 for VISTEX S4 Conversion	Post-Conversion
54	3	AD2K903855	Workbench	Released	100	AI4	M1-#10276-FI: 03/3225499-0003/Note impl. (Task 98466)	Custom Code
58	4	AD2K904276	Customizing	Released	100	AI4	WP Authorization - ALL Z* Roles	Custom Code
59	10	AD2K904545	Workbench	Released	100	AI4	D2-#10276-CA: Req 1: Custom Code Adaptation (new)	Custom Code
61	8	AD2K904811	Workbench	Released	100	AI4	D2-#10276-CA: FIORI Activation Content (new)	Custom Code
63	3	AD2K905516	Customizing	Released	100	AI4	C2-#10276-CA: FIORI Activation Content (new)	Custom Code
70		AD2K906474	Workbench	Released	100	AI4	D1-#10276-FI: S/4Hana: CreditMgt Mig	Credit Management Migration
73		AD2K906681	Customizing	Released	100	AI4	Activate BC Sets Mobisys after S/4 Conversion	Post-Conversion
77		AD2K907456	Workbench	Released	100	AI4	M1-#10276-FI: NA/3148858-0001/Note impl. Task 102459	Financial Data Migration
84	14	AD2K907882	Workbench	Released	100	AI4	D2-#10276-CA: Custom Code Adaptation (Delta after DR)	Custom Code
85	11	AD2K907884	Customizing	Released	100	AI4	C2-#10276-CA: Delta Customizing (Delta after DR)	Custom Code
86	11	AD2K907898	Workbench	Released	100	AI4	D2-#10276-CA: Additional FIORI Content (post DR)	Custom Code
87	9	AD2K907900	Customizing	Released	100	AI4	C2-#10276-CA: Additional FIORI Content (post DR)	Custom Code
89		AD2K907943	Customizing	Released	100	AI4	C1-#10276-SD: Customizing GTS Commodity Code Mig - ENABLE	Custom Code
90		AD2K907947	Customizing	Released	100	AI4	C1-#10276-SD: Customizing GTS Commodity Code Mig - DISABLE	Custom Code
91	7	AD2K907951	Customizing	Released	100	AI4	C2-#10276-CA: Additional D&I Auth. Content	Custom Code
92	13	AD2K907955	Workbench	Modifiable	000	AI4	D1-#10276-SD: ZB31 S/4Hana	Custom Code
93	10	AD2K908017	Customizing	Modifiable	100	AI4	C1-#10276-SD: ZVAB S/4Hana - Post adjustments	Custom Code
100	12	AD2K908161	Workbench	Modifiable	100	AI4	D1-#10276-SD: ZVAB S/4Hana (Tuning)	Custom Code
101	8	AD2K908202	Customizing	Released	100	AI4	Error correction in Z_MM_15pot_GetArticledata + C	Custom Code
102		AI1K900728	Workbench	Released	000	DS4	SPDD Adjustment AI1	SPDD
103		AI1K901728	Workbench	Released	100	DS4	AI1 Conversion - SPAU	SPAU
104		AI2K901559	Workbench	Released	100	DU2	SPAU AI2 Conversion	SPAU
105		AI4K901508	Workbench	Released	100	DU4	SPAU Dress Rehearsal	SPAU
106		AD2K908438	Customizing	Released	100	AI4	C2-#10276-CA: Authorization for GoLive Team	Financial Data Migration
107		AD2K908389	Customizing	Released	100	AI2	Automatic FX conversion for MR21	Post-Conversion

Hypercare

Why we are here?

- No critical bugs after Go-live
- Only few programs to bring back (mainly print programs)
- Minor bugs found during first month
- Performance optimization continues (for ex. replacement objects, like MARC)



05 What would I do differently now?

What would I do differently?

Not that much 😊

- Use another tool instead of Excel
- Earlier start of dual maintenance
- Earlier/faster decommissioning
- Earlier usage of SolMan

The screenshot displays the SAP SolMan interface. On the left, a project board for 'tomizationTestProject Team' shows a Kanban view with columns for 'Active' (128 items), 'Resolved' (564 items), and 'Testing Fail'. Two items are visible in the 'Testing Fail' column:

- Item 4090: CLAS-ZCA_BRO_WCHNORDER_DPC. Status: Failed. Iteration: Iteration 2. Assigned to: Unassigned. Adaptation: Not Selected. Owing Bu.: Manufacturing. Item Parts: TC5. G/T: G/T.
- Item 4094: CLAS-ZCA_BK_PL_AMSA1_C. Status: Failed. Iteration: S4HanaProcessC... Assigned to: PEGEL, Lukas. Adaptation: Not Selected. Owing Bu.: Manufacturing.

The main view shows the details for item 45085: CLAS-ZEC_MATERIAL_DELTA. The status is 'Testing Failed'. The reason is 'Moved to state Testing Fa'. The description is 'S4HanaProcessCustomizationTestProjectDigital and Information'. The 'Additional Information' section shows 'ASAP Package: ZECO_API' and 'Original Item: CLAS-ZEC_MATERIAL_DELTA'. The 'Discussion' section is empty.

06 Summary

Summary



50K objects in scope



38K ATC Findings



16 Hager Developers



12 TCS Developers + 1 Dev Lead



2 years / 1 year of full-time CCA



1 Common success

hagergroup

**Thank you
for your
attention!**

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