



AD07: Migration + Upgrade = happy users, but how much downtime?

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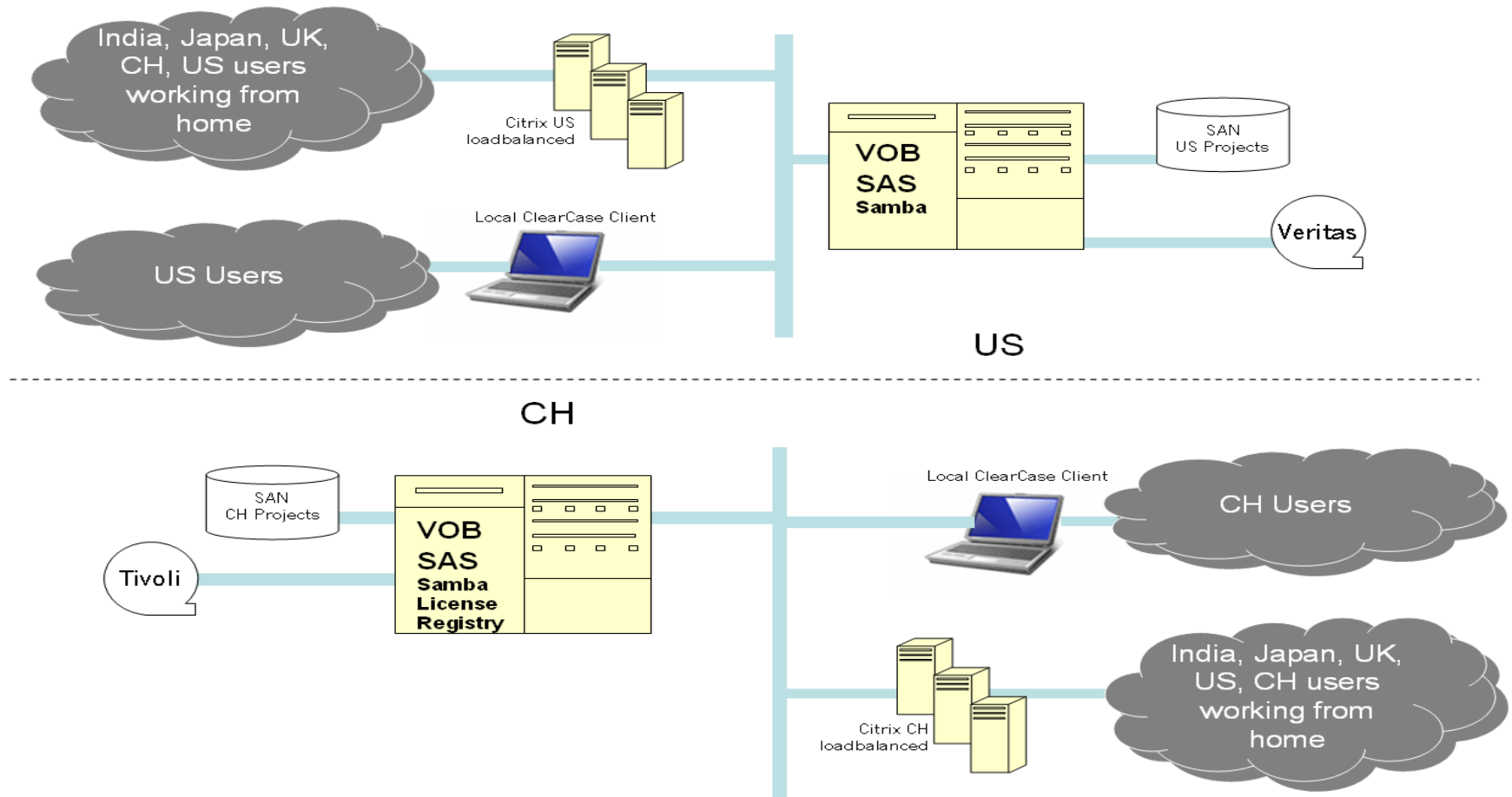
Content

- Description of migration and upgrade as part of the whole GPSII upgrade project at Novartis
- Lessons learnt (both good and bad) – described in detail
- Examples of SAS differences discovered
- Summary

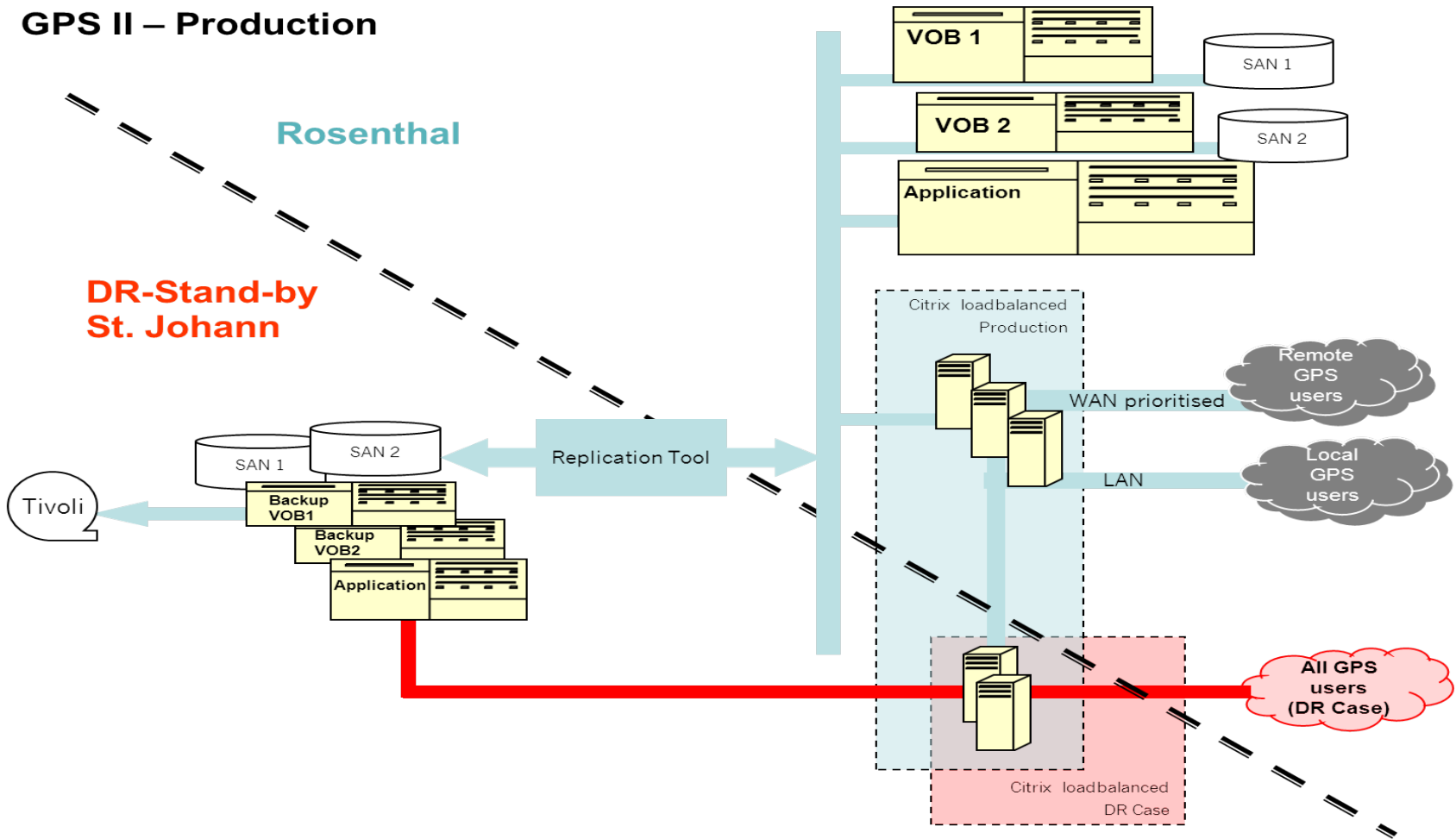


Migration and upgrade as part of the GPSII upgrade project

GPS II: Current Architecture



Migration and upgrade as part of the GPSII upgrade project cntd



Lessons Learnt:

Do not under-estimate what you need →



Lessons Learnt:

Consult ALL business areas.



Lessons Learnt:

Ensure the appropriate communication channels are set-up

Basic Communication Model



3. MESSAGE is
Transmitted
through a
CHANNEL



1. SENDER has a thought
2. SENDER ENCODES
thought into a MESSAGE

4. RECEIVER DECODES
message
5. RECEIVER
INTERNALIZES message

Lessons Learnt:

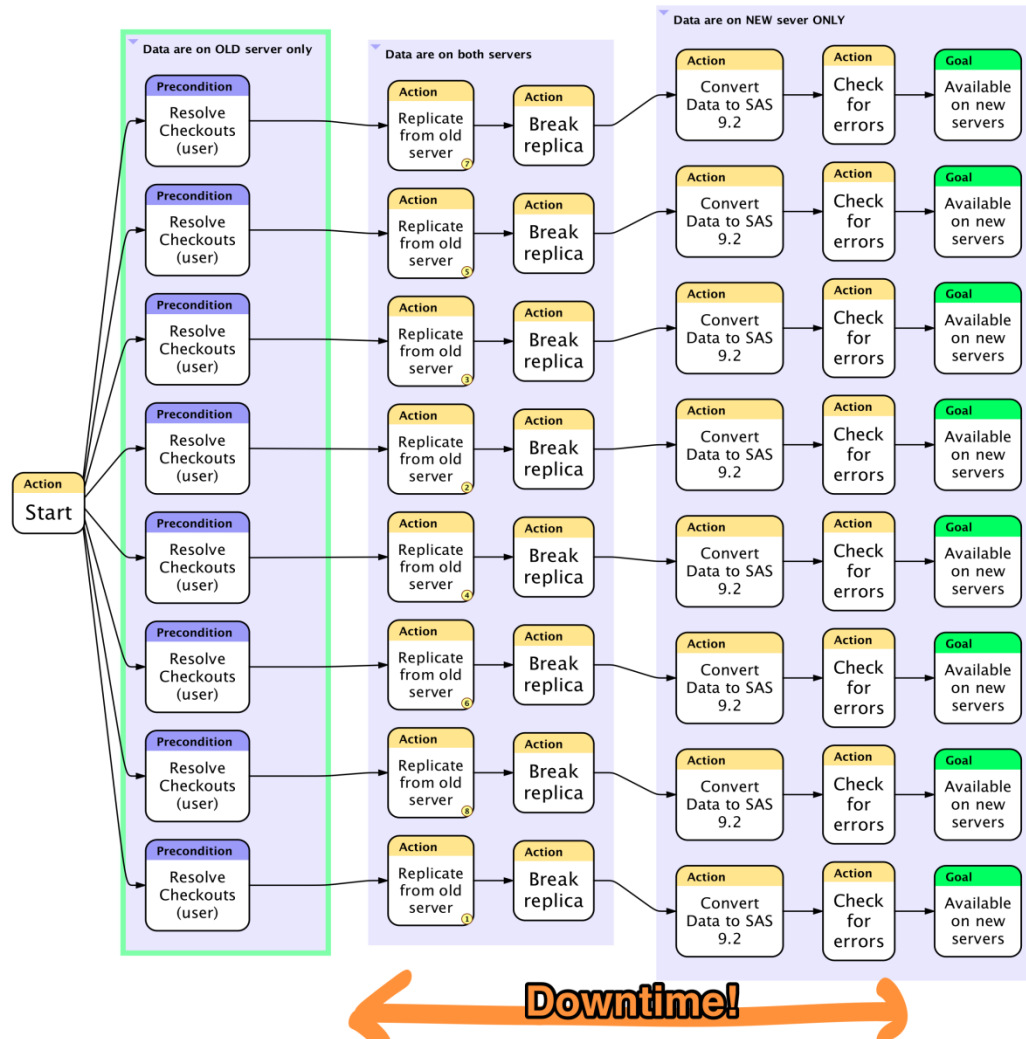
Do not be afraid to (radically) change your plan

Version 1 — 1 PP slide 1. Scanning (one time exercise completed before migration) 2. Resolve scanning problems by business 3. Replication with scripts 4. Migration 5. Inform PP about start 6. Run last replication and lock projects on old server 7. Check for errors in log file 8. Run migration script for bundle of VOBs / projects 9. Check log files 10. Unlock VOBs and 11. Inform VOB owner if successful or not	Process Version 2 — 13 pages 1. Get Lists Of Users Per Group For The Target VOBs 2. Inform All Users of the Vob That Migration is due 3. Check If Vob is in A TA Group 4. Replicate Vob From The Release 1 To Release 2 Servers 5. Re-protect The Vob Replica On Rel 2 6. Scan Vob For Potential Migration Problems 7. Inform Migration team CIS team Of The Vob Scan Results 8. Wait For OK From CIS migration team that target VOBs are clean 9. Lock VOB on old server 10. Last search For Checkouts And View-private Files 11. Force A Final Vob Replication 12. Inform GPS Support Final Vob Replica Has Been Made 13. Transfer Mastership To Release 2 14. Prevent back-replication To The	Process version 5 — 45 pages 1. Check Sas Labels And S attributes Are Created In New 2. Inform All Users Having / To The Vob That Migration i coming 3. Create And Distribute L Check-outs Per Target Vob Se 4. Cancel / Undo Last Check 5. Scan Vob For Potential S migration Problems 6. Lock Release 1 And Run T nal Vob Synchronisation 7. Import Final Vob Changes lease 2 8. Checks Before Breaking Re 9. Migration Abort Deadline 10. Break Replication From C The New Environment 11. Remove Any Rem Checkouts From The Source S 12. Last Scan Before Sas Mig 13. Check All VOBs To B grated Have The Correct P sions 14. Final Checks Before Ru Sas Migration 15. Migrate To Sas Version 9 16. Check SAS V9 Migration For Issues 17. Assess Reasons For (Study) Migrations 18. Remove Checkouts Left I Incomplete Migration 19. Rerun Failing Studies 20. Apply Appropriate / Rights 21. Release VOBs For Access 22. Make Vob Available For esim 23. Make Any Special C Available From Citrix Server 24. Inform Users Migration C Project Is Completed 25. Execute Fall Back To Rel Data 26. Precursor Setup And Rep tion Activities
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Figure 6: Versions 1, 2 & 5 of the migration process. Some steps from V3 have been moved to a separate process not listed here and the process for CNC bundles is also in another document

Lessons Learnt:

Perfecting the process – from parallel and homogenous

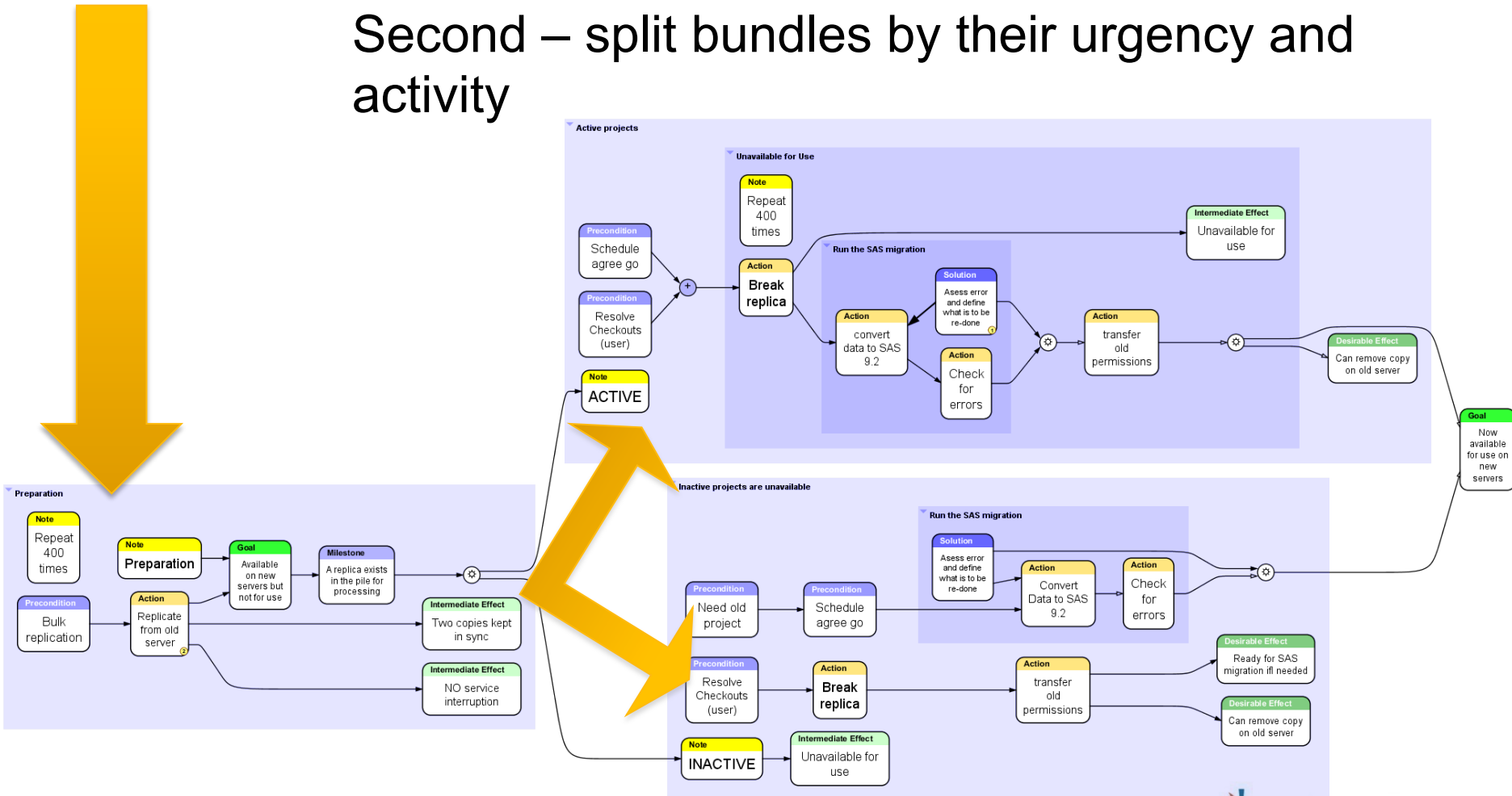


Lessons Learnt:

Perfecting the process - to two streams, heterogenous

First – split replication to separate stream done first

Second – split bundles by their urgency and activity



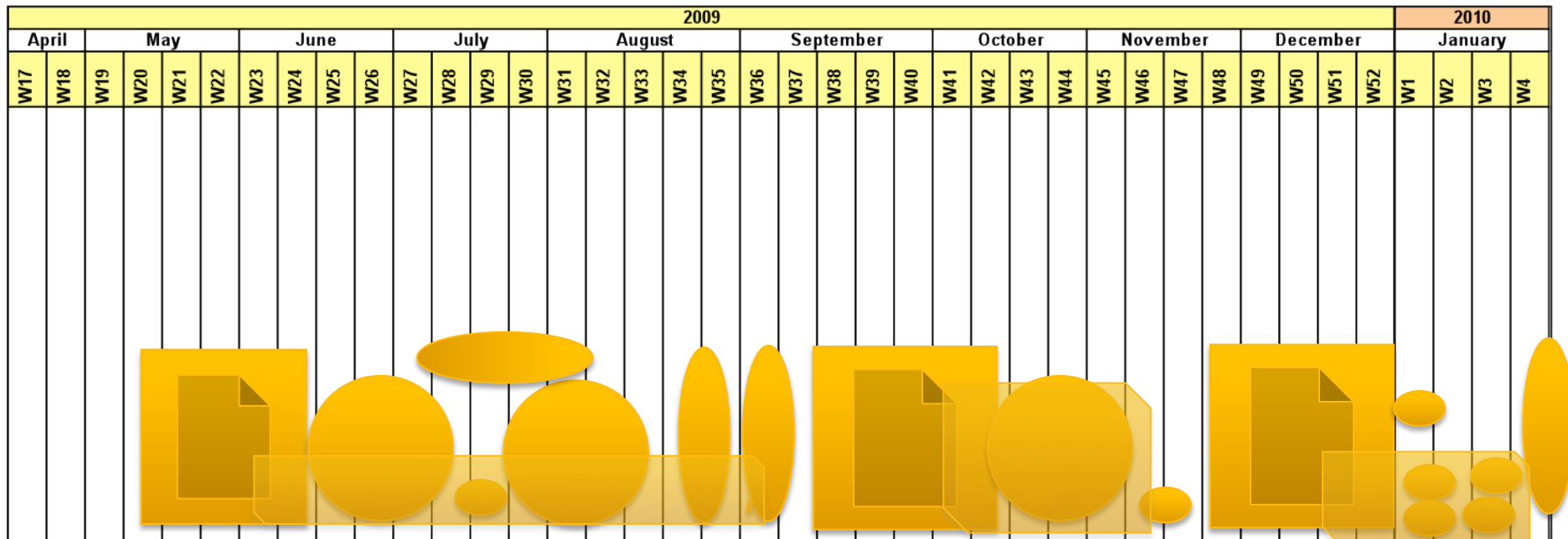
Lessons Learnt:

Perfecting the process - schedule as three types

First – Weekends → FIXED

Second $\rightarrow$ fixed

Third → inactive – background fillers can be re-scheduled easily



Lessons Learnt:

Develop a clear and concise migration schedule, after having assessed all variables.

	TA	PP Site	Migration Champion	Program Programmer/ VOB owner (Responsible for IQ Sign off)	Program Statiscian/ VOB owner	VOB Bundeling (project level)	VOB (Indication)	Migration Treatment C=Copy Only M=Full Migrate X=Special	Active VOB	Active Project	VOB Size [MB]	VOB Size [GB]	Size VOB Bundle [GB]	#VO BS	#VOBS Spec Protect	#Studies	#Studies per VOB spec. Protection	#Groups per VOB spec. Protection	# Studies in CPV per VOB	Scanning Effort (h)	Scanning Duration (h)	Mig Effort (h)	Mig Duration (h)	Migrator
1																								
2	IID	BS	Pradeep Shetty	Philippe Le Claire	Karthinathan Thang	Project 1	Indication 1	M	Active	Active	7832	7.6	8.54	3	0	42			1	1	2	2	3	Y
3	IID	BS	Pradeep Shetty	Philippe Le Claire	Karthinathan Thang	Project 1	Indication 1 restricted	M	Active	Active														
4	ONCOLOGY	IN	TBC	Sujoy Mondal, Karthik	Sundaramoorthy	Project 1	Indication 2	M	No VOB	Active		0.0	8.54	3	0	42				1	2	2	3	
5	IID	BS	Pradeep Shetty	Philippe Le Claire	Karthinathan Thang	Project 1	Indication 3	M	Active	Active	913	0.9	8.54	3	0	42			1	1	2	2	3	
6	IID	BS	Pradeep Shetty	Philippe Le Claire	Karthinathan Thang	Project 2	Indication 1 restricted	M	Active	Active														
7	NSO	TBC	Stephan Mynhardt	Sujoy Mondal, Karthik	Sundaramoorthy	Project 3	Indication 1 restricted	C	Unknown	Unknown														SS
8	IID	EH	Pradeep Shetty, Stephan M	Tina Chen	Yanming Yin	Project 4	Indication 1	M	Active	Active	9691	9.5	9.50	5	0	25			1	2	3	2	4	VN
9	IID	EH	Pradeep Shetty, Stephan M	Tina Chen	Yanming Yin	Project 4	Indication 1 restricted	M	Active	Active	37	0.0	9.50	5	0	25	1	1		2	3	2	4	VN
10	IID	EH	Pradeep Shetty, Stephan M	Tina Chen	Yanming Yin	Project 4	Indication 2	M	Active	Active	30	0.0	9.50	5	3	25				4	4	4	5	VN
11	IID	BS	Pradeep Shetty, Stephan M	Tina Chen	Yanming Yin	Project 4	Indication 2 restricted	M	Active	Active	1	0.0	9.50	5	3	25	1	1		4	4	4	5	VN

	TA	PP Site	Break Replica & Sync Due	Proposed Start Date	Proposed End Date	Proposed Week #	Proposed Month	Downtime (days per migration)	Weekend	Migration Complete	Actual Date Completed	Actual Week # Completed	Critical in June 2009?	Critical in July 2009?	Critical in Aug 2009?	Critical in Sep 2009?	Critical in Oct 2009?	Critical in Nov 2009?	Critical in Dec 2009?	comment
1																				
2	IID	BS		Tue, 04/08/09	Wed, 05/08/09	32	Aug	2	No	Yes	Wed, 12/08/09	33	non-cr	non-cr	non-cr	non-cr	non-cr	non-cr	non-cr	Vob on GPS server and PP/PS assigned
3	IID	BS		Tue, 04/08/09	Wed, 05/08/09	32	Aug	2	No	Yes	Wed, 12/08/09	33	non-cr	non-cr	non-cr	non-cr	non-cr	non-cr	non-cr	Missing from sheet - added on 19.8.09
4	ONCOLOGY	IN		Tue, 04/08/09	Wed, 05/08/09	32	Aug	2	No	Yes	Wed, 12/08/09	33	non-cr	non-cr	non-cr	non-cr	non-cr	non-cr	non-cr	VOB not existing on server
5	IID	BS		Tue, 04/08/09	Wed, 05/08/09	32	Aug	2	No	Yes	Wed, 12/08/09	33	non-cr	non-cr	non-cr	non-cr	non-cr	non-cr	non-cr	Was lost from schedule? - Re added 1.7.09 - AMS
6	IID	BS		Tue, 04/08/09	Wed, 05/08/09	32	Aug	2	No	Yes	Wed, 12/08/09	33	non-cr	non-cr	non-cr	non-cr	non-cr	non-cr	non-cr	Missing from sheet - added on 19.8.09
7	NSO	TBC	Wed, 28/10/09	Thu, 29/10/09	Fri, 30/10/09	44	Oct	2	No	Yes	Thu, 29/10/09	44								Missing from sheet - added on 16.10.09
8	IID	EH	Mon, 26/10/09	Tue, 27/10/09	Wed, 28/10/09	44	Oct	2	No	Yes	Tue, 03/11/09	45	critical	critical	critical	critical	critical	non-cr	non-cr	Vob on GPS server and PP/PS assigned
9	IID	EH	Mon, 26/10/09	Tue, 27/10/09	Wed, 28/10/09	44	Oct	2	No	Yes	Tue, 03/11/09	45	critical	critical	critical	critical	critical	non-cr	non-cr	non-critical time period
10	IID	EH	Mon, 26/10/09	Tue, 27/10/09	Wed, 28/10/09	44	Oct	2	No	Yes	Tue, 03/11/09	45	critical	critical	critical	critical	critical	non-cr	non-cr	Vob on GPS server and PP/PS assigned
11	IID	BS	Mon, 26/10/09	Tue, 27/10/09	Wed, 28/10/09	44	Oct	2	No	Yes	Tue, 03/11/09	45	critical	critical	critical	critical	critical	non-cr	non-cr	non-critical time period

Lessons Learnt:

Manage expectations: - Process was expected to run 'like a machine' from the start



Lessons Learnt:

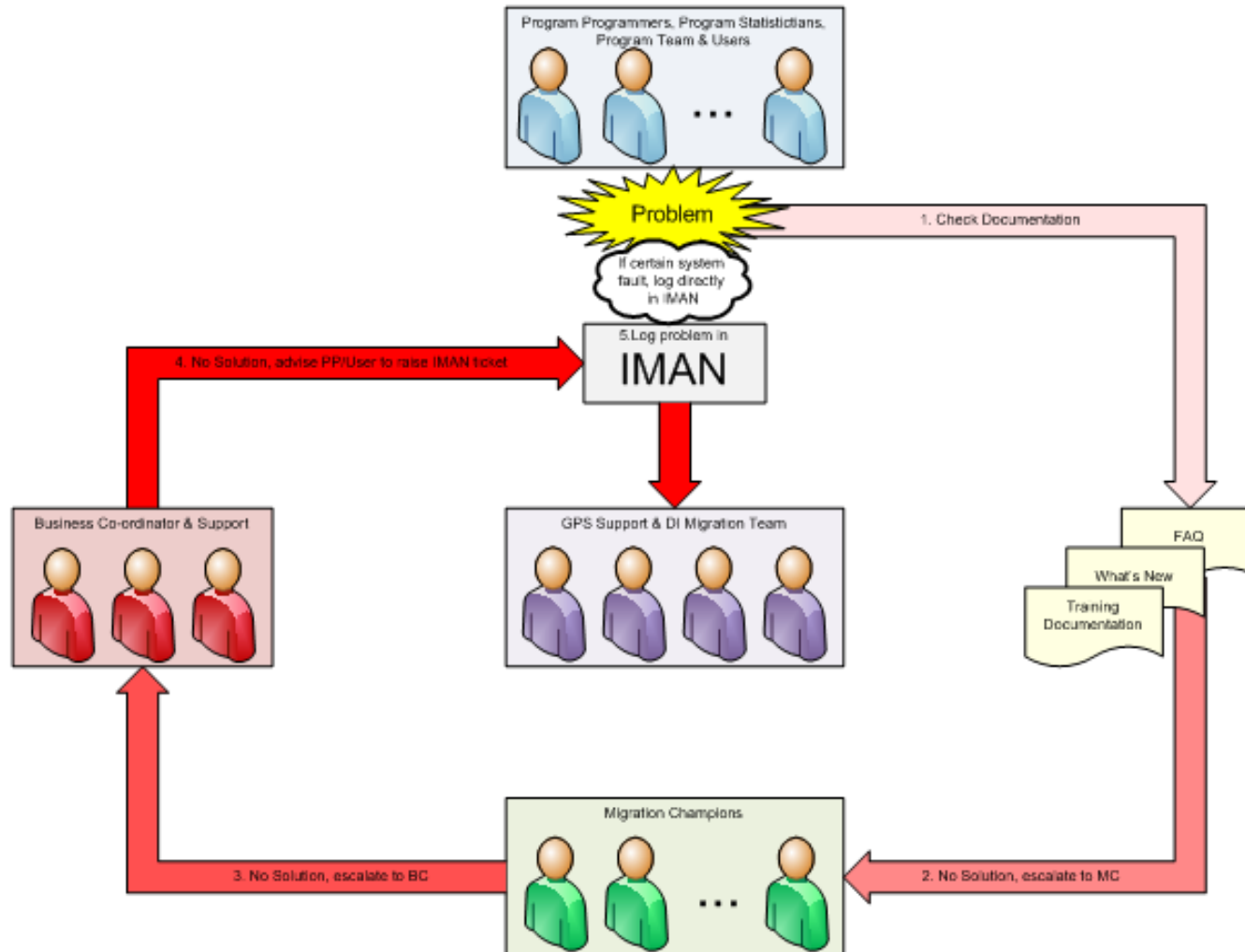
Automate the migration process where possible



Lessons Learnt:

Users MUST follow all given directions / instructions

Post Migration Issue Management Process



Examples of SAS differences found

1. Change in the file name function / option:

SAS code in SAS V8.2	SAS code in SAS V9.2
Function FINFO(file-id, <u>File name</u>)	Function FINFO(file-id, <u>Filename</u>)

Examples of SAS differences found

2. When using if then else statements, a 'lagging' then cannot be used:

SAS code in SAS V8.2	SAS code in SAS V9.2
<pre>%if &Stephen="useless" %then %do; %put &Stephen is useless; %end; %else %then %do; %put &Stephen is not useless; %end;</pre>	<pre>%if &Stephen="useless" %then %do; %put &Stephen is useless; %end; %else %do; %put &Stephen is not useless; %end;</pre>

Examples of SAS differences found

3. Standard transformation for confidence intervals changed from LINEAR to LOGLOG. Use the Survival statement with convtype = LINEAR to reproduce sas v8.2 results:

SAS code in SAS V8.2	SAS code in SAS V9.2
<pre>PROC LIFETEST DATA=example OUTSURV=outdat; TIME time*event(0); RUN;</pre> and another example..... <pre> proc lifetest data=indset method=km timelist=4 6 12 18 reduceout outs=outkmest; time pfs1_1n*pfs1_cs(1); strata ttreg1c; run;</pre>	<pre>PROC LIFETEST DATA=example; TIME time*event(0); SURVIVAL OUT=outdat CONFTYPE=LINEAR; RUN;</pre> <pre>proc lifetest data=indset method=km conftype=LINEAR timelist=4 6 12 18 reduceout outs=outkmest; time pfs1_1n*pfs1_cs(1); strata ttreg1c; run;</pre>

Summary

- Thoroughly assess the project before making any resource estimations
- Involve all appropriate departments from an early stage and make sure appropriate communication channels are in place.
- Develop a clear and concise migration plan, getting input from all appropriate areas affected and manage expectations of all business personnel involved
- Put in place a process for issue management (and make sure it is followed), adequate documentation and training etc
- Specific details can be found in the AD07 paper on the PhUSE website.



Questions?

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