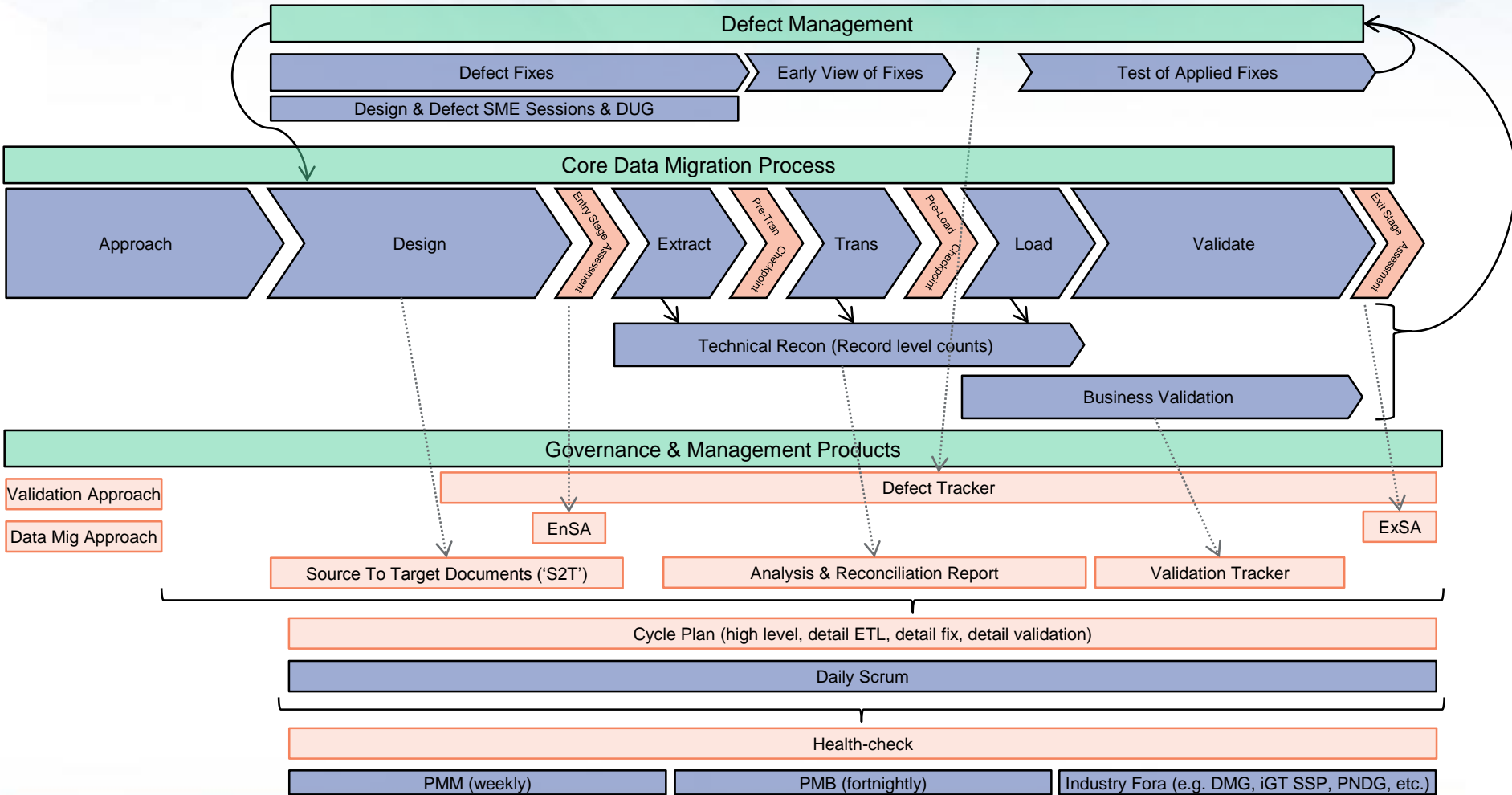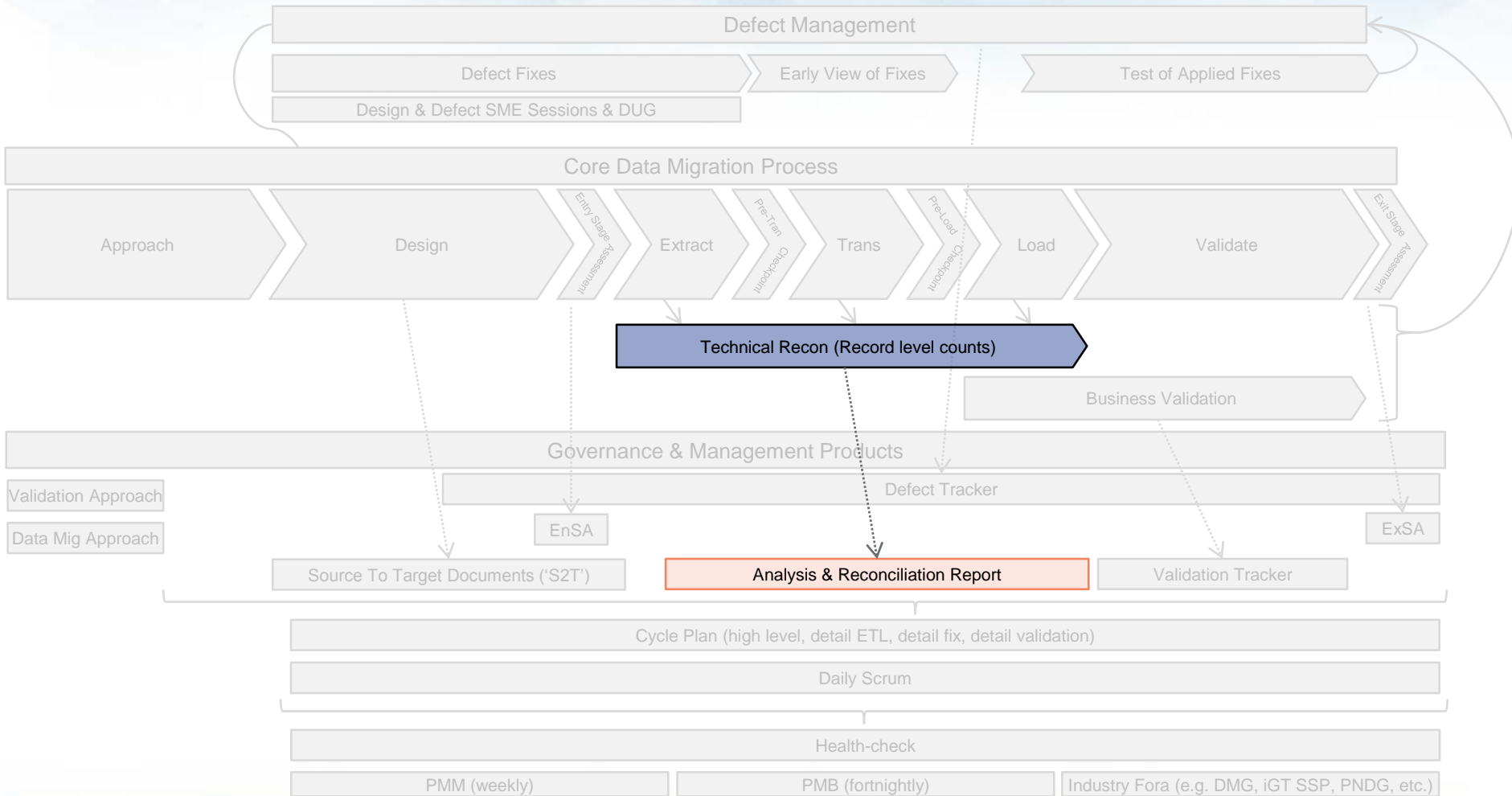# RIAG Slides for Data-Functionality Testing

1. The 'Data Lifecycle Approach' (through Bulk, Delta load and NED loads)

2. Current Data Picture – Dashboard view

3. Validation scope and purpose

4. Level of Data Acceptance being undertaken before IDR2 & IDR3

5. Data and Functionality – Simulation of Data and Function for Go- live @ IDR1

Data Operating Environment

Defect Management

| Defect Fixes | Early View of Fixes | Test of Applied Fixes |

Design & Defect SME Sessions & DUG

Core Data Migration Process

Approach → Design → *Entry Stage Assessment* → Extract → *Pre-Tran Checkpoint* → Trans → *Pre-Load Checkpoint* → Load → Validate → *Exit Stage Assessment*

Technical Recon (Record level counts)

Business Validation

Governance & Management Products

Validation Approach

Data Mig Approach

Defect Tracker

EnSA

ExSA

Source To Target Documents ('S2T')

Analysis & Reconciliation Report

Validation Tracker

Cycle Plan (high level, detail ETL, detail fix, detail validation)

Daily Scrum

Health-check

| PMM (weekly) | PMB (fortnightly) | Industry Fora (e.g. DMG, iGT SSP, PNDG, etc.) |

Legend:
- Process / Meeting
- Product / Output
- Heading

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Key Products – Technical Recon

Defect Management

| Defect Fixes | Early View of Fixes | Test of Applied Fixes |

Design & Defect SME Sessions & DUG

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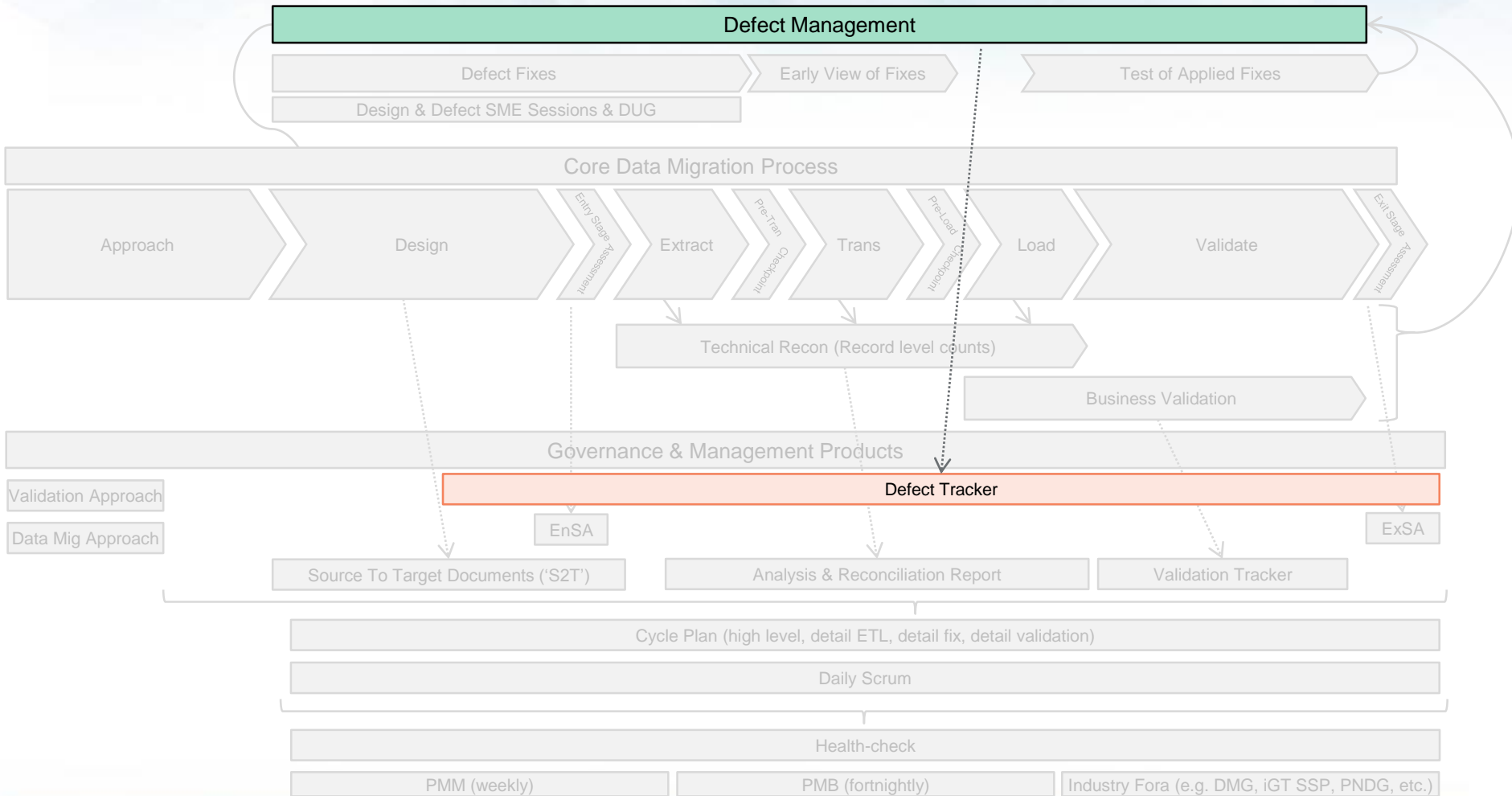|		
Product	–	Analysis & Reconciliation Report
Producer	–	Wipro Data Migration Team
Produced	–	During load cycle, starting parallel with Extraction until after Load completes
Distribution	–	Daily issue to stakeholders
Content	–	Record counts, per object at each stage of the process & timing capture
Data Scope	–	All data
Outcomes	–	Discrepancies Analysed; Defects raised; Applicable fallout rectified and reattempted;

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Key Products – Business Validation Tracker

Defect Management

| Defect Fixes | Early View of Fixes | Test of Applied Fixes |

Design & Defect SME Sessions & DUG

Core Data Migration Process

Approach → Design → Entry Stage Assessment → Extract → Pre-Tran Checkpoint → Trans → Pre-Load Checkpoint → Load → Validate → Exit Stage Assessment

Technical Recon (Record level counts)

Business Validation

Governance & Management Products

Validation Approach

Data Mig Approach

Defect Tracker

EnSA

ExSA

| Source To Target Documents ('S2T') | Analysis & Reconciliation Report | **Validation Tracker** |

Cycle Plan (high level, detail ETL, detail fix, detail validation)

Daily Scrum

Health-check

| PMM (weekly) | PMB (fortnightly) | Industry Fora (e.g. DMG, iGT SSP, PNDG, etc.) |

Product	–	Validation Tracker
Producer	–	Data Validation Team Lead
Produced	–	Daily During Validation (From Load stage to end of Validation window)
Distribution	–	Within DV Team
Content	–	Validation Test List, Owner & Status
Data Scope	–	As per cycle, various levels of breadth and depth as per individual test case
Outcomes	–	Progress discussed; defects raised; test cases reviewed

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Key Products – Defect Tracker

Defect Management

Defect Fixes | Early View of Fixes | Test of Applied Fixes

Design & Defect SME Sessions & DUG

Core Data Migration Process

Approach | Design | Entry Stage Assessment | Extract | Pre-Tran Checkpoint | Trans | Pre-Load Checkpoint | Load | Validate | Exit Stage Assessment

Technical Recon (Record level counts)

Business Validation

Governance & Management Products

Validation Approach

Data Mig Approach

Defect Tracker

EnSA

ExSA

Source To Target Documents ('S2T') | Analysis & Reconciliation Report | Validation Tracker

Cycle Plan (high level, detail ETL, detail fix, detail validation)

Daily Scrum

Health-check

PMM (weekly) | PMB (fortnightly) | Industry Fora (e.g. DMG, iGT SSP, PNDG, etc.)

Product	–	Defect Tracker
Producer	–	Data Management Project Team
Produced	–	Daily
Distribution	–	Data Stakeholders
Content	–	Details of the defects, their current states and ownership
Data Scope	–	All data defects, pertinent to all sources
Outcomes	–	Action plans assigned for defect resolution

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Validation Methods and Coverage

No	Reporting Type	Purpose	Coverage	Source
1	Comparison Reports	Compares legacy data cut to post transformed data pre load (staging area)	Full apart from reading data where a subset of 20k is checked	✓ GT ✓ IGT ✓ US
2	Legacy dumps	Legacy dumps for specific attributes are extracted from the legacy tables in the SAP staging area	Validation scope is varied depending on window and cycle	✓ GT ✓ IGT ✓ US
3	SAP Only	spot check in SAP Only or query in SAP using SQVI	Partial	✓ GT ✓ IGT ✓ US
4	Legacy to SAP Queries	Legacy and SAP data extracted to a separate schema and compared – post load	Subset of data - Auto validation Phase 2 will bring in full	✓ GT ✓ IGT
5	Horizontal Checks (E2E)	Queries check multiple data items from multiple tables	MPRN based	✓ GT ✓ IGT ✓ US

Validation tracker examples

Adobe Acrobat Document

Successes during IDR1 inc. Data and Functional testing

- The following activities were undertaken as planned:
  - IDR1 commenced on 19/09
  - Non Effective Days (NED) activities commenced
  - Communications/Check Points (internally and externally) were held
  - Daily dashboards published on xoserve.com

- Issues were managed effectively

- Majority of business transition scenarios were met; albeit some slightly later than planned

- Resource rota worked well

- Go-Live date of 08/10 was met

- Components run for the first time in the Production environment: SAP-ISU; SAP-PO; AMT Market Flow; Interaction between SAP-ISU and Gemini

- Processed a sample of post go-live transactions for the 6 critical file types (CNF; NOM; UPD; JOB; WAO; UMR)

The Data work stream is working with Functional teams to simulate further Functional Testing to test data sets with functional processes ahead of IDR2, this is aimed to bring about greater levels of confidence post IDR1 success

Transformation Rules

	High	Moderate	Low	Grand Total
MT Inclusion - Yes	1	6	28	35
MT Inclusion - No	0	4	33	37
Grand Total	1	10	61	72

Transformation Rules have been categorised through PwC facilitation at the Data Management Group to determine Priority & Importance of the rules to Industry

T Rules included in MT with Industry Priority

High, 1
Moderate, 6
Low, 28
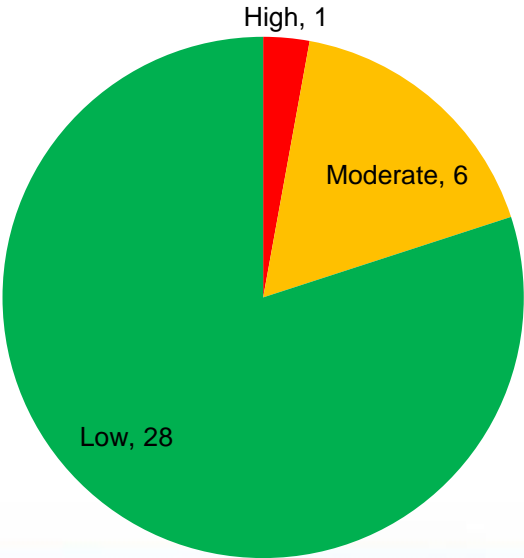
T Rules not included in MT with Industry Priority

High, 0
Moderate, 4
Low, 33
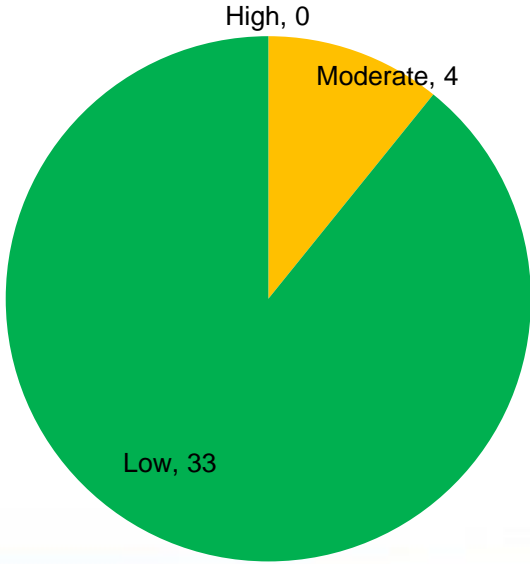
Transformation Rules testing in Data

- Transformation Rules Testing through Data Cycles

Transformation Rules Incremental Build & Test
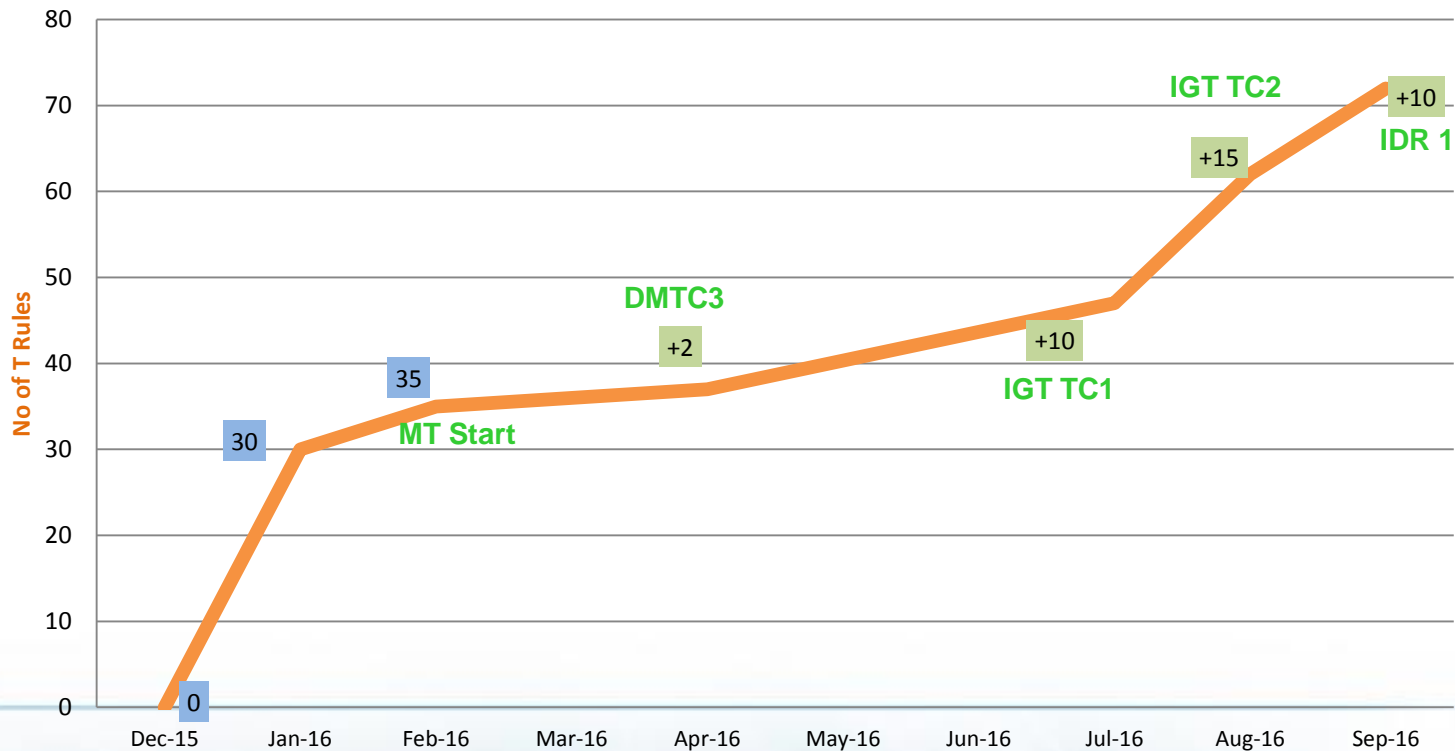
Data Defect landscape

- Defect picture taking into account all Data defects detected by different sources of testing – Functional Testing , Data Acceptance & Market Trials

1. Data was provisioned to UAT - *Defects from Functional Testing were addressed to allow FT to continue*

2. Data Validation work starts with Data Team formed specifically for Data Acceptance. *Spike in data defects uncovered*

3. Drive down of Data Defects for MT. *Those that remained classed as "use with caution" (140k) within MT load*

4. Data was provisioned to **Unique Sites UAT** - *Defects from Functional Testing were addressed to allow MT entry of US*

5. Remaining defects are mainly Delta & IGT & a few Bulk defects found post Bulk 1 Being addressed through Delta & IGT Test Cycles (see plan)

Legend: DM, FT, MT

Data Workstream Dashboard

Data Source	Current Cycle	Plan Perf.	Quality RAG	Progress	Response to RAID
Delta	**TC3 (complete)** Delta TC3a (started)	G	G	**Further testing of Delta solution and Incremental Defect Fixing continues in Delta Test Cycle 3a** • **Plan:** Plan performance for Delta Test Cycle 3 & 3a is in line with expected performance • **Issues:** N/A • **Quality:** Quality Parameters achieved 'moderate' defect fix rate in Delta TC3 targets by fixing more defects and achieving higher fix success rate than forecast. A number of new defects discovered in cycle through validation • Delta TC3a is currently being validated and has 28 defects in scope for "Fix and Prove" out of 62 Open defects **Data Defects Landscape** / **Fallout from cycle** **Green for Cycle** *28 defect "fixed" and to be proven in Delta TC3* — 98.8% avg. as success rate for 19.23m data items loaded as part of Delta 1,2,3 (IDR1)	1. Data Delta Plan is expected to continue the burn down to zero defects and incorporating lessons learnt from IDR1.
iGT	**IDR1 (complete)** IGT TC4 (starts on 28/11/16)	A	A	**iGT performance and quality to be further proven in iGT cycles before IDR2.** • **Plan:** iGT Performance and defects fixes now incorporated into further cycles iGT TC4 & TC5 • **Issues:** IDR issues being addressed • **Quality:** Quality of iGT fixes was lower than the target, a number of defects remain open post IDR1 (X36@16/11/16) – these will be tested in further planned cycles prior to iDR2. **Data Defects Landscape** / **Fallout from cycle** Amber for Cycle X37 "Open" defects (21/11) — 99.8% success rate for 35.62m data items loaded	1. iGT Performance tuning being undertaken 2. iGT Test cycle for resolving remainder of the X367"Open" defects as of 21/11/16 (iGT TC4) before IDR2 3. Offshore visit by Xoserve SMEs for "Root Cause analysis" has been successful in moving a large number of IGT defects to "fixed status.
Pre-Bulk	**Pre Bulk 2 (ETL complete; validation in progress)**	G	G	**Bulk Defects being addressed in Pre Bulk 2 Cycle and Agile Runs before Bulk 2 commences in Dec '17** • **Plan:** Plan tracked to complete ETL and defect validation as per milestone. • **Issues:** New defects have been discovered in cycle and are being addressed . • **Quality: Pre Bulk Cycle** targets majority of defects that remain open post Bulk 1 and has achieved a high success rate. Further defects to undergo agile 'Fix & Prove' cycles to close down outstanding defects before Bulk 2 (X48 Open defects) **Data Defects Landscape** / **Fallout from cycle** TBC *38 defect "fixed" within cycle* — TBC	1. There is a risk that Auto validation runs may uncover some more defects that need to be resolved in cycle before Bulk 2 – Agile fix cycles being planned for any residual risk.

Data Workstream Dashboard

| Data Source	Current Cycle	Plan Perf.	Quality RAG	Progress			Response to RAID
Unique Sites	**IDR1 (complete)**	**G**	**G**	**Unique Sites run successfully as part of IDR1** • **Performance :** Achieved plan timings in IDR1 • **Issues :** None • **Quality :** A number of open data defects to be addressed via a cycle run before start of IDR2			1. Further US cycle planned to sweep up X31 "Open" Migration and Quality defects as of 31/11/2016 and practice US migration before IDR2.
				Data Defects Landscape		Fallout from cycle	
				Green for Cycle		99.9% success rate for 41.7k data items loaded	
In Flights (Data)	**IDR1 (complete)** **Further InFlights testing (TBC)**	**A**	**R**	**Integrated Inflight testing being planned with Transition teams** • **Performance:** Performance timings for 4 out of 6 data scenarios attempted in IDR1 were proven. Further testing of full scope planned from December '17 • **Issues :** Inflight scenarios carry a number of defects from IDR1 which are being addressed. • **Quality:** In Flights Defect resolution is underway and will be tested in an integrated test cycle with transition			1. Focussed "Root Cause Analysis" and lessons learnt on In flights are underway. 2. An end-to-end strategy for iGT and US InFlights is being formalised with Transition 3. Dedicated Test cycle for InFlights is to be executed in collaboration with Transition.
				Data Defects Landscape		Fallout from cycle	
				Amber for Cycle		Part of Delta reporting	
LPG	**N/A** **LPG TC1 (complete)**	**Not in Scope for IDR1**	**N/A**	**Further LPG Testing underway** • **Performance:** Proven through prev. cycles • **Issues :** N/A • **Quality:** X8 "Open" Data defects exist across data migration and Data quality – these are being addressed via the LPG Test cycle validation (underway)			1. LPG data previously tested and performing to planned timescales.
				Data Defects Landscape		Fallout from cycle	
				8 Open defects in scope for "Fix & Prove"		N/A	

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Delta Defect Forecasting

- Model updated @10/11/16 following actuals generated off the back of IDR1, revisions to delta test approach, and progress to-date on Auto Validation solution roll-out.
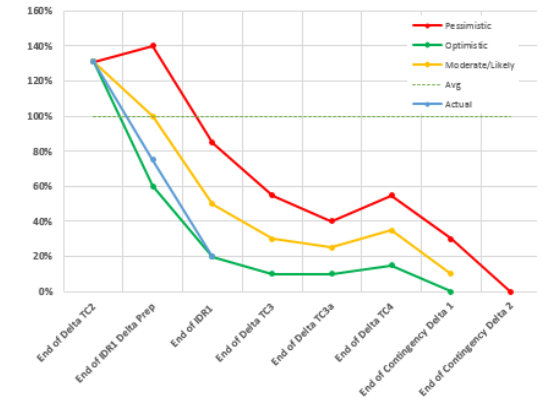

Delta Defect Target Fix Rate Profiles
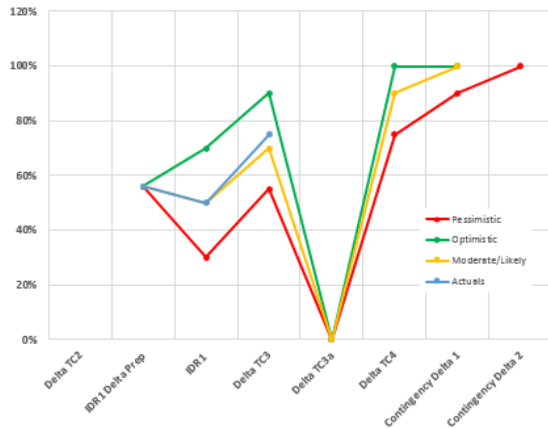
Delta Defect Fix Success Rate Profiles
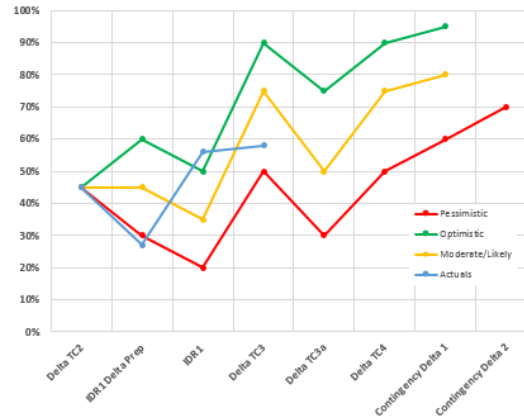

New Delta Defect Detection Rate Profiles

- TC3 targeted the fix to 56/73 open defects, slightly above the Moderate profile forecast.
- TC3a targeting the fix for remaining 18, all others in TC4.

- **Actual defect fix success rate**, thus far, based on those defect fixes which have had a retest attempted in TC3 is **70%** (26/37 closed defects).

- Too early to determine new defect detection rate in TC3.
- Spike in TC4 detection rate to reflect the roll-out of Auto Validation Phase 2.

Aggregate Delta Defect Forecasted Profile Comparison
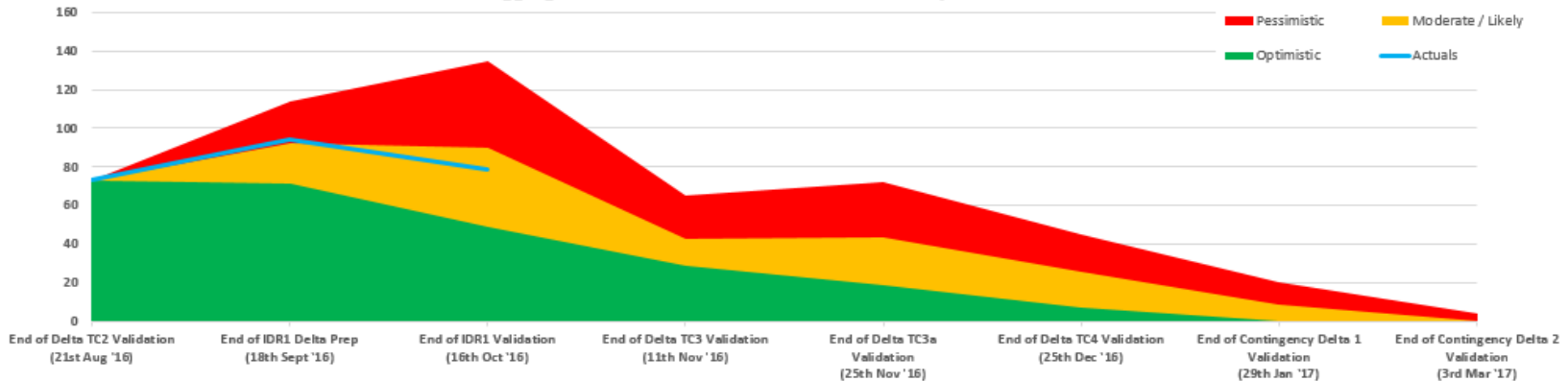
iGT Data Defect Update

- 36x open iGT/DM CSEP data defects (DM & DQ) currently exist.
- Defect forecasting has been undertaken to determine how many dedicated iGT migration test cycles are required between now and the start of IDR2.
- Assuming a 'Moderate/Likely' profile for all three variable factors of New Defect Detected Rate, Defect Fix Success Rate and Defect Target Fix Rate, it is anticipated that **2+1contingency cycles are required**.

New iGT Defect Detection Rate Profiles

iGT Defect Fix Success Rate Profiles

iGT Defect Target Fix Rate Profiles

Aggregate iGT Defect Forecasted Profile Comparison
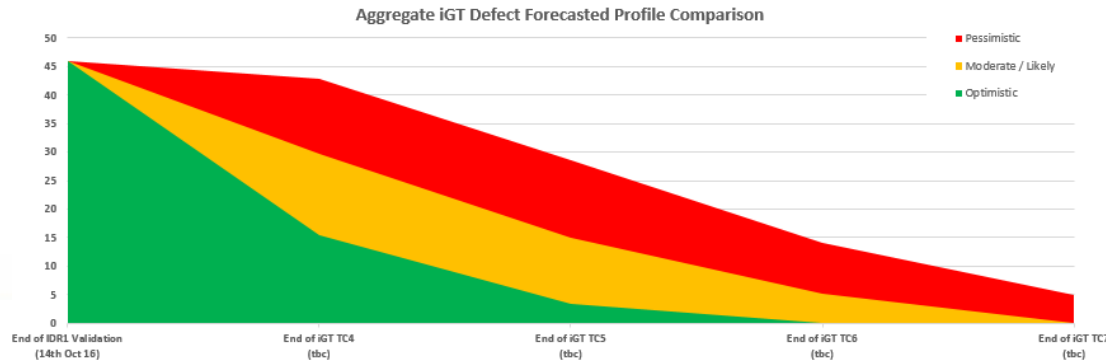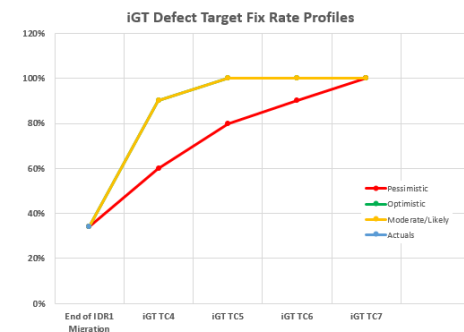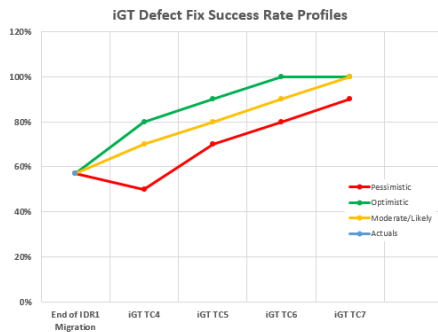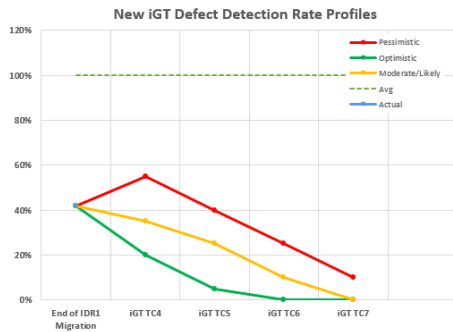
- iGT TC4 is expected to run from w/c 28th November, with fixes for the majority, if not all, of our 36x open defects targeted.