

4.3: Quality measures and quality gates

Theory and practical examples

Why use them?

- *Quality gates can be used to improve the visibility of quality in the production process as well as being used to measure and monitor quality in real time at strategic points.*
- *Quality gates are designed to facilitate the detection, discussion and resolution of issues and problems through a collaborative effort to improve the quality of products.*

Benefits of implementing

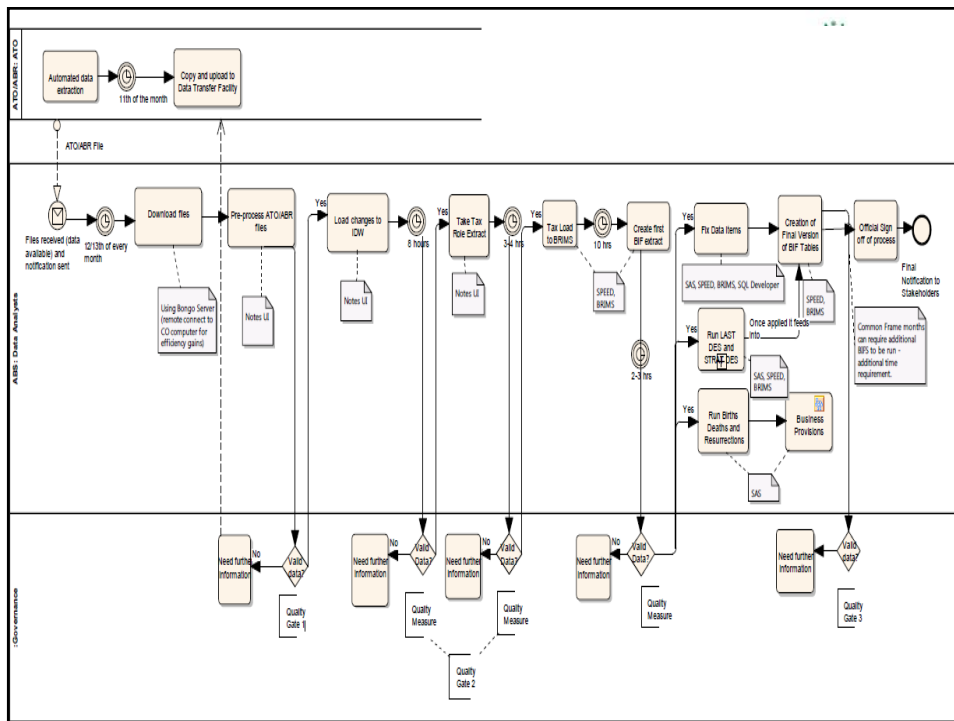
- Model of accountability and responsibility for production processes;
- The ability to detect and rectify problems early on;
- Predetermined expectations of acceptable levels of quality;
- Documentation and monitoring of issues and actions throughout the production cycle; and
- The creation of a store of corporate knowledge.

What are they?

- 6 Components:
 - Placement
 - Quality Measures
 - Roles
 - Tolerance
 - Actions
 - Evaluation

ABS Statistical Risk Assessment Framework

Likelihood	Consequences				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	M	H	H	E	E
Likely	M	M	H	E	E
Possible	L	M	H	E	E
Unlikely	L	L	M	H	E
Rare	L	L	M	H	H



Quality Gates Template

Quality Gate Definition Document				
Quality Gate Name:				
Placement*:				
Quality Measures	Source **	Due Date	Complete (Yes/No)	Comments / Changes [Evaluation]

* Placement should be linked to business process model / statistical process cycle
 ** Source should indicate where to locate the quality measure

Quality Measures Definition Document - Quantitative Quality Measures (e.g. 97%)		
Name of Quality Measures		
Description		
Why we need the measure	[What aspect of the process / collection does this measure tell us about that we wouldn't otherwise know?]	
Where		
Quality Gate	[What quality gate does this measure feed into?]	
Level	[What level of detail do we require this measure at? e.g. Industry subdivision, state, local government, etc.]	
Calculation		
Formula	[How is the measure calculated?]	
Frequency	[How often does this measure need to be calculated? e.g. daily, weekly, monthly, etc.]	
Scope	[Are there any specific inclusions or exclusions from your measure?]	
Reference	[Is there a paper that provides more information / background on this definition?]	
Standard	[Is the formula and definition a standard used by the organisation or an international organisation?]	
Data Items used in formula	Description	Source / Availability
[name]		
[name]		
[name]		
[name]		



Presentation of quality measure	
Monitoring	[How are you going to 'track' the quality measure to see if everything is okay? e.g. percentage change from one period to another, trend over time, etc.]
Frequency	[What is the frequency that we wish to use in our monitoring / display for reporting?]
Display	[How are we 'displaying' the Quality Measure? e.g. graph, table]
Tolerance	[What are the threshold or tolerance levels for this quality measure and when is the measure being assessed against these?]
Actions	[What are the actions that need to be taken depending on the quality measure and where it fits within the tolerance? i.e. Red, Amber and Green actions.]
Roles	
Owner Area / Gate Keeper	[Who is responsible for monitoring this quality measure?]
Provider Stakeholders	[Who are the people or areas responsible for providing the information that feeds into this quality measure, or providing the quality measure? This includes those persons responsible for the calculation as well.]
Other Stakeholders	[Who or what areas may need to be contacted if there is a problem identified with the process by this quality measure?]



ABS Example

December 2014 Quality Gate Checklist

Note: Quality Gates 4-7 are listed in the CF Quality Gates tab.

[Quality Gates introduction](#)

[Quality Gate 1](#) | [Quality Gate 2](#) | [Quality Gate 3](#) | [CF Quality Gates](#)

Processing Issues Documentation: [Processing Issues Documentation](#)

Quality Gate 1: The Latest ATO Data is Received and Validated

[Link to Quality Gate 1](#): This doclink contains all information about how to run each measure, and what the thresholds are

- ▶ [September 2014](#)
- ▶ [October 2014](#)
- ▶ [November 2014](#)

December 2014 Quality Gate Checklist

Note: Quality Gates 4-7 are listed in the CF Quality Gates tab.

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Quality Gate 1: The Latest ATO Data is Received and Validated

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▼ September 2014

Quality Measure	Checked By	On Date	Summary of findings	Pass/Fail (signer and date)
1.1 ATO Extract gate is correct			Source information files	
1.2 File is complete (number of records match footer, making allowance for the removal of any duplicate name records)			Source information files	
2.1 Number of records are within tolerance (compared to previous month and same month of last year)			ABR tax file details from 2012 onwards	
2.2 File is uncorrupted and all fields match expected format			Source information files ABR tax file details from 2012 onwards	
3.1 DTF (download) files are validated (comparison of DTF (download) files to DVD files)				
SIGN OFF OF QUALITY GATE 1				

December 2014 Quality Gate Checklist

Note: Quality Gates 4-7 are listed in the CF Quality Gates tab.

[Quality Gates introduction](#)

[Quality Gate 1](#) | [Quality Gate 2](#) | [Quality Gate 3](#) | [CF Quality Gates](#)

Processing Issues Documentation: [\[1\]](#)

Quality Gate 2: Information Data Warehouse Load

[Link to Quality Gate 2](#). This doclink contains all information about how to run each measure, and what the thresholds are

▼ September 2014

Quality Measure	Checked By	On Date	Summary of findings	Pass/Fail (signer and date)
1.1 All pre-ABR load processes and checks have been completed			See Quality Gate 2 document linked above for list of processes and checks	
1.2 ABR Load to IDW successful			Time that job took to complete:	
2.1 Provider record MI is produced			Source information files Timeseries spreadsheet	
2.2 Number of Data Items MI is produced			Source information files Timeseries spreadsheet	
2.3 Count of ABRs by ABR status (IDW stock population) <ul style="list-style-type: none"> Count of active ABRs Count of ABRs not loaded to IDW GSTP and ITW counts, ANZSIC class counts (to be added later) 			Source information files Timeseries spreadsheet	
SIGN OFF OF QUALITY GATE 2				

[Quality Gate 1](#) | [Quality Gate 2](#) | [Quality Gate 3](#) | [CF Quality Gates](#)

Processing Issues Documentation: [\[1\]](#)

Quality Gate 3: Load to BRIMS and creation of BIF tables

[Link to Quality Gate 3](#). This doclink contains all information about how to run each measure, and what the thresholds are

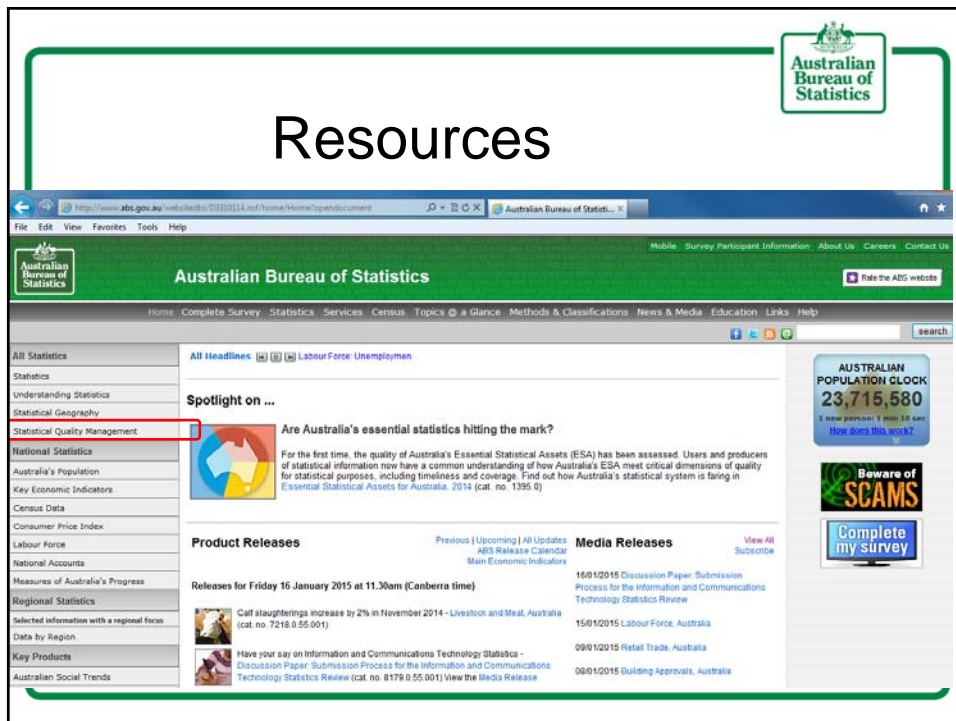
▼ September 2014

Quality Measure	Checked By	On Date	Summary of findings	Pass/Fail (signer and date)
1.1 Tax load is successful			Time taken: Issues:	
2.1 Creation of BIF tables - pre Last_DES updates			Source information files	
2.2 Last_DES created, cleared and applied to BRIMS			Source information files	
2.3 Creation of BIF tables - post last_DES updates			Source information files	
2.4 Count of ABRs by status (BRIMS stock population) <ul style="list-style-type: none"> Count of active ABR births Count of ABRs not loaded to BRIMS 			Source information files	
3.1 Births Deaths Resurrections MI is produced			(Notify BDR Team Leader or Member once this is done)	
SIGN OFF OF QUALITY GATE 3				

Issues for consideration

- Dedicated resources for the review and development of quality gates;
- Limiting the number of quality gates;
- Eliminating duplication of gates;
- Quality measures should be mutually exclusive;
- Consultation with stakeholders; and
- Placement of quality gates at critical control points.

Resources



The screenshot shows the Australian Bureau of Statistics website interface. The left-hand navigation menu includes the following items:

- All Statistics
- Statistics
- Understanding Statistics
- Statistical Geography
- Statistical Quality Management** (highlighted with a red box)
- National Statistics
- Australia's Population
- Key Economic Indicators
- Census Data
- Consumer Price Index
- Labour Force
- National Accounts
- Measures of Australia's Progress
- Regional Statistics
- Selected information with a regional focus
- Data by Region
- Key Products
- Australian Social Trends

The main content area features a 'Spotlight on ...' section with the headline 'Are Australia's essential statistics hitting the mark?' and a 'Product Releases' section with the following items:

- Releases for Friday 16 January 2015 at 11.30am (Canberra time)
 - Call slaughtering increase by 2% in November 2014 - Livestock and Meat, Australia (cat. no. 7218.0.55.001)
 - Have your say on Information and Communications Technology Statistics - Discussion Paper: Submission Process for the Information and Communications Technology Statistics Review (cat. no. 8179.0.55.001) View the Media Release
- Media Releases
 - 16/01/2015 Discussion Paper: Submission Process for the Information and Communications Technology Statistics Review
 - 15/01/2015 Labour Force, Australia
 - 09/01/2015 Retail Trade, Australia
 - 08/01/2015 Building Approvals, Australia

Other visible elements include the 'AUSTRALIAN POPULATION CLOCK' showing 23,715,580, 'Beware of SCAMS', and a 'Complete my survey' button.

Resources

- <http://www.abs.gov.au/websitedbs/D3310114.nsf/home/Quality:+Data+Quality+Management>

Data Quality Management

Quality Links

Statistical Quality Management
The ABS Data Quality Framework
Data Quality Management
ABS Quality Information Papers
Other Sources of Information Related to Quality in the ABS



ABS Data Quality Management is principally informed by the [ABS Data Quality Framework](#)

Statistical Risk Management

Statistical risk is the chance or likelihood of something going wrong with your statistical processes that affects the quality or integrity of your statistical outputs. The following papers on this page help to provide information on some quality initiatives that may help you in managing the risks around your data.

Quality Gates

Have you ever gotten to the end of your statistical process and realised you made a mistake right back at the beginning? Quality gates can help you manage the quality of your statistical processes by helping you to identify any data problems closer in the process to when they occur. This allows you to fix the potential errors in a more timely manner.

ABS 2010, Information Paper: Quality Management of Statistical Processes Using Quality Gates, Dec 2010, cat. no. 1540.0, ABS, Canberra.

Discussion points

- How do you mitigate against various risks?
- What checks, measures and quality assurance steps do you have/need in place?