DRAFT - ICT Project Guidance

Definition – Default Transitional Requirements

Version:

0.1

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## Description

This document lists Transitional Requirements for the delivery of a solution.

## Synopsis

A solution is the Transition from an existing state to a future state that includes a system defined by Quality and Functional requirements. The Transition involves setting up delivery processes and systems, incorporating pre-agreed processes to meet policies and governance, resourcing, licensing and subscribing, setting up delivery pipelines, infrastructure provisioning, system provisioning (reference data and code sets, groups, group roles, users, workflows, media), migrating data via API (“application programming interface”) based ETL (“extraction, transformation and loading”), progress reporting, etc.

## Contents

[Description 1](#_Toc145232973)

[Synopsis 1](#_Toc145232974)

[Contents 2](#_Toc145232975)

[Synopsis 3](#_Toc145232976)

[Introduction 3](#_Toc145232977)

[Heading Level 3 3](#_Toc145232978)

[Heading Level 4 3](#_Toc145232979)

[Appendices 4](#_Toc145232980)

[Appendix A - Document Information 4](#_Toc145232981)

[Images 4](#_Toc145232982)

[Tables 4](#_Toc145232983)

[References 4](#_Toc145232984)

[Review Distribution 4](#_Toc145232985)

[Audience 4](#_Toc145232986)

[Structure 4](#_Toc145232987)

[Diagrams 4](#_Toc145232988)

[Terms 5](#_Toc145232989)

## Introduction

BOSSCARD/ RAID: Background [], Objective, Options, Scope[In/Out], Stakeholders [Users], Constraints, Assumptions, Risks, Dependencies, Decisions, Deliverables.

## Document

Solutions and their components are described using Requirements. Risk to project delivery is increased when described with an insufficient number of requirements. On the other hand, Risk to projects may be increased when RFx respondents avoid responding due in part to the number of requirements given.

### Tiers

A solution to the above dilemma is an improved organisation of the requirements into Tiers to permit mature and experienced respondents concentrate on the few specific requirements, and potentially skim over the requirements they would already familiar with (Default system requirements, and potentially the Government and/or Education Sector requirements built on top of them).

Categories

Under each of the above Tiers,

### Content

The requirements are given a unique ID, a short Title[[1]](#footnote-2), a Statement developed according to SMART principles, inclusive the Obligations category (MAY|SHOULD|MUST [NOT]), usable for contractual reasons, described further in Details with accompany Notes to facilitate implementation.

### Response

The Requirements are optimal objectives that different Respondents will be able to implement to varying degrees. If a respondent cannot meet the obligation’s statement, in the spirit of the Details given, the respondent may provide an Response that describes how their proposed solution can offer a comparable outcome, or make the requirement redundant.

### Meanings

A small number of specific phrases are used throughout the listed requirements that have import.

Proprietary Systems

Pre-developed Services that are licensed or

Custom Code

Any code that is developed to deliver this solution. This includes but is not limited to deployment pipeline instructions, scripted automation of route changes, infrastructure as code to develop environments via automation, custom modifications done to a proprietary system, static unit tests, dynamic acceptance tests developed using code, scripted automation of configuration steps, scripted automation setting changes, data storage schema definitions and their application, scripted automation of provisioning, scripted automation of data migration.

Documentation

Includes documentation of development

Deliverables

Deliverables include

# Transition Requirements

## Project Specific Transitional Requirements

Important:  
While highly dependent on the maturity of the underlying organisations, this section should be small, reusing organisation defined processes where available, appropriate, current and correct.

## New Zealand Ministry of Education Specific Transitional Requirements

Important:  
While highly dependent on the maturity of the underlying organisations, this section should be small, reusing industry defined processes where available, current & correct.

## New Zealand Education Sector Specific Transitional Requirements

### Communications

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|  | # | **ID** | Statement | Rationale | Fit | Details | Response |
|  |  | | | | | | |
|  | TR-EDU-CMAN-00 | NZEdu/ Communications/ Gazette | The addition of the system, it’s purpose, and use of data MAY require gazetting in the Education Sector gazette. | Regulation (e.g. NZ Education Act) define obligations for certain changes within the education system. |  |  |  |

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## New Zealand Government Agency Sector Specific Transitional Requirements

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| TR-EDU-CMAN-00 | NZEdu/ Change Management/ Gazette | The addition of the system, it’s purpose, and use of data MAY require gazetting in the Education Sector gazette. | Regulation (e.g. NZ Educaition Act) define obligations for certain changes within the education system. |  |  |  |

## New Zealand Sector Specific Transitional Requirements

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## Default ICT Transitional Requirements

### Communications

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|  | TR-DEF-COM-00 | Disclosures/ Tracking | A detailed statement as to the use of cookies MUST be developed. | Users have the right to opt out of being tracked to permit other outcomes than the correct performance of the service. |  | Covering:  - Required:  - Systems, inclusive of Session, Permission, System Preference tokens  - Non Required: - Feature Suggestions  - Resource  Suggestions  - Performance - Recommendations - Advertising |  |
|  | TR-DEF-COM-00 | Disclosures/ Data Use | A detailed statement explaining the purpose of collecting personal information, its intended use, who it is shared with, how to correct it MUST be developed. | Users have the right to be informed as to what their data is collected for and who it will be shared with, and how to update their information. |  |  |  |
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Channels

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|  | TR-DEF-COM-00 | Disclosures/ Tracking | A detailed statement as to the use of cookies MUST be developed. | Users have the right to opt out of being tracked to permit other outcomes than the correct performance of the service. |  | Covering:  - Required:  - Systems, inclusive of Session, Permission, System Preference tokens  - Non Required: - Feature Suggestions  - Resource  Suggestions  - Performance - Recommendations - Advertising |  |

### Privacy

Table 3: Default System Privacy Quality Requirements

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| # | **ID** | Statement | Rationale | Details | Fit Critiera |  |
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| QR-GOV-PRV-01 | Privacy Act 1993 | The solution MUST adhere to the applicable Acts outlined under the ‘Target Objectives’. | The solution must meet legal obligations before being accreditable to be delivered as a service by this organisation. | Same requirement as defined under Default Services Privacy Constraints, except making reference to AoG Principles. |  |  |

## Accreditation

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| # | Title |  | Statement | Rationale | Details | X |
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| QR-GOV-ACC-01 | Government | Legal obligations – Government Sector | Services **MUST** comply with current legislation obligations:  Public Records Act,  Official Information Act | The solution is subject to the same laws that govern any other aspect of the country. Specifically, but limited to, the following considerations:  Privacy: Security Breaches must be immediately reported to this organisation’s Privacy Officer and the Privacy Commissioner. Users must be informed of their Privacy rights. Users must be able to correct incorrect PII.  Public Records: For government transparency reasons, no data record must be physically deleted (only logically deleted),  OIA: the system must make it reasonably possible to respond to OIA Requests. |  | J |
| QR-GOV-ACC-02 | Government | Regulation obligations | Services **MUST** comply with obligations made to other agencies, including:  National Archive’s directives for public data,  Declaration on Open & Transparent Government,  International Open Data Charter (2017),  NZ Data Content Standards,  NZ Digital Service Standards,  GDRP (2018),  NZ Government Web Standards (NZGWS). | Archiving: For government transparency reasons, no data record must be physically deleted (only logically deleted),  Data should be made available by API wherever it does not impact a Natural or Legal Person’s Privacy or weaken the solution’s security.  The solution’s interfaces must be usable by all forms of the visually impaired.  The solution interface media must be translatable into national written languages.  Dispensation for delays in meeting these obligations may be requested and may be temporarily granted, but it remains the vendors cost to remedy.  An Authority to Operate – which is required prior to a solution be deployed to PROD -- cannot be obtained without demonstrable proof that agreements have been upheld. |  |  |
| QR-A03 | Government | Regulated guidance | Services **MUST** follow All of Government (AoG) guidance including:  NZ Cloud First,  NZ Information Security Manual (NZISM)  NZ API Standards and Guidelines  NZ Data and Information Principles  NZ Data and Information Management Principles (NZDIMP),  NZ Government Access & Licensing (NZGOAL) | The solution must be hosted on cloud infrastructure where feasible at reasonable cost,  The solution must adhere to guidance provided for security, API design, copyright and data usage.  Dispensation for delays in meeting these obligations may be requested and may be temporarily granted, but it remains the vendors cost to remedy.  Issuance of an Authority to Operate is dependent on evidence that AoG guidance being adhered to --unless dispensation is obtained prior to Go-Live of the solution. |  |  |

## Processes

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| # | **ID** | Statement | Rationale | Details | Fit Criteria |  |
| QR-MOE-PRO-01 | Integrity/External Identity Provider Services/ESL | Deployments MUST be delivered to | MOE’s Change Management Board (CAB) is the Governance board on which SMEs and Managers of the Ministry’s Support, Operations, Management, Privacy & other stakeholders participate to ensure they have received, reviewed and accepted material that will assist them with supporting the service. | C&A will expect that Security Report has been developed a 3rd party Security specialists dynamic investigation of the penetrability of an example environment in which the system has been deployed.  Support will expect an Application Support Guide to have been developed.  Operations will expect an operations manual they can use to direct inquiries.  Maintenance will expect documentation of the automated deployment process of the parts they must delivery (configuration, settings, code, etc.) |  |  |

## Delivery

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| # | **ID** | Statement | Rationale | Details | Fit Criteria |  |
| QR-ESC-MAI-00 | Documentation/Support | An Application Support Guide MUST be developed to document how to Support the service. | The organisation’s Customer Support Services specialists require a document to guide their interactions with end users, and information on whom to contact for Tier II & III support. | In the Ministry, the document is referred to as an Application Support Guide (ASG). Its creation is confirmed at CAB. |  | J |
| QR-ESC-MAI-00 | Documentation/Maintenance | An XXX MUST be developed to guide |  |  |  |  |
| QR-MT-B-12 | **Baseline** | **Maintainability/Change Control** | Releases **MUST** be coordinated as per this organisation's Change Control process. | Impact to end users and other stakeholders (e.g., Support) must be minimised by letting them know of upcoming changes to the system. |  |  |

## Education Sector Specific

## Government Sector Specific

## ITC Sector Specific



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| QR-DEF-REL-06 | Disaster Recovery | The solution MUST include an organisation accepted automated Disaster Recovery plan. | Upon disaster to the system environment and/or production data, the service must be able to be made available to end users within the shortest agreed delay. | The solution is accompanied with an automated DR recovery solution that is able to redevelop an environment within time delays defined within the ‘Target Objectives’. |  |  |

## Delivery

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| QR-DEF-MNT-00 | Change Notification | Feature changes to the solutions MUST be communicated to subscribed Stakeholders. | Uses should be able to prepare for changes to the system. | The system notifies users of system changes.  Note:  use organisation Change Control provided processes to notify stakeholders other than users. |  |  |

## Processes

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| # | ID | Statement | Rationale | Details | Fit Criteria |  |
| QR-DEF-MNT-00 | Change Control | Large change releases MUST be coordinated as per this organisation's Change Control process. | Impact to end users and other stakeholders (e.g., Support) must be minimised by letting them know of upcoming changes to the system. | The solution’s deployment process:  Is compatible with a formal change control processes.  Uses automated pipeline workflows and email based workflows to notify and gain approval for deployments from one or more approvers prior to beginning automated deployments. |  |  |

## Delivery

This section details requirements for the delivery of the service components to this organisation.

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| # | ID | Statement | Rationale | Details |  |  |
| QR-DEF-DEL-01 | First Delivery to PROD Environment | The service MUST be made available to end users within the duration defined in the Quantitative Requirements table. | It is important to not let a long start up and delayed Go Live Date mentality become common place. |  |  | J |

## Business Continuity

This section covers the business continuity of services provided to this organisation – not the business continuity

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| QR-DEF-DEL-00 | Escrow | IF contracted, proprietary code MUST be maintained current within a digital escrow service. | Small & Medium size firms may cease operations, without a purchaser for their intellectual property.   Their product should be able to mitigate risks associated with this outcome. | Consider using an online escrow service to which both parties can be granted access. |  |  |

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| # | ID | Statement | Rationale | Details | Fit Criteria |  |
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| QR-DEF-DEL-01 | First Delivery to PROD Environment | The service MUST be made available to end users within the duration defined in the Quantitative Requirements table. | It is important to not let a long start up and delayed Go Live Date mentality become common place. |  |  | J |
| QR-DEF-DEL-02 | Automated Delivery | All aspects that are not provided as part of a subscribed SaaS MUST be deployed by automation to target environments. | Results, regularly reconsidered, must be the norm in order to decrease the risk of non-delivery. | This includes customisation, integration, configuration, settings, data migrations, testing, etc.  The solution’s required system security is dependent on components and security rating of the contents within the system.  When a custom project starts, when there is no editing capability, and therefore no data, the focus MUST be on developing an automated secure deployment process -- even if the system is just a bare bone “Hello World” product.  Once a rudimentary automated pipeline is developed, it, like any code, is iteratively developed further, hardening it, making it more resilient, maintainable, flexible, configurable, secure – and by doing so, making the system it deploys more secure, modifiable, installable. |  |  |
| QR-DEF-DEL-03 | Delivery Cadence to a PROD data environment. | The solution MUST be made available to end user stakeholders at a high cadence, as per the  ‘Target Objectives’.:   “Prod Data Environment Delivery Cadence”(J). | Deliver early and often to require reliance on automation to be able to manage compilation, deployment and testing in the short time frame.  Automation solves DR and testing IP retention over the project's lifespan. requirements  High cadence permits regular testing of assumptions as to what is most important to stakeholders, putting results in front of them, allowing them redirecting subsequent effort based on new or simply refined requirements. | The solution is delivered at a cadence matching changes to requirements (e.g.: every fortnight) using a constantly and iteratively developed automated pipeline.  All things equal, the delivery cadence is expected to be every 2 weeks.  Note: in many ways the pipeline is the actual deliverable to the sponsor, while the system it in turn delivers is the deliverable to business users. |  | J |
| QR-DEF-DEL-04 | Test Definitions First | The solution’s work items MUST be completed with test scripts before any development on the work item begins. | Developers must know what they are aiming for, rather than developers and testers both interpreting the intent of Business Analysts separately, putting in the effort to do their individual tasks, only to find out at the end they disagreed as to the BA’s intent. | Work items are developed by converting user desires into structured definitions, as either requirements or use cases.  Definitions are only defined as ready for pickup for development when the use case is completed with a set of one or more target test definitions.  Developers first convert the test definitions into automated pipeline tests. Since there is no code, the automated pipeline fails subsequent check-ins.  Developers then develop the code to pass the automated test definitions. |  |  |
| QR-DEF-DEL-05 | Automated Deployment | The solution MUST include automated deployment functionality to meet Operations Specialists operability expectations. | In order to support Testability, Availability quality objectives, the solution must be able to be deployed rapidly after quality testing has been ascertained, also rapidly. | The solution uses an automated pipeline to:  Compile code  Run unit tests  Package Artefacts into deployable packages  Optionally create the target environment using Infrastructure as Code instructions  Deploy the package to a Build Test environment  Optionally:  run Data restoration (if PROD),  develop change notification  or  Run Integration tests,  Determine whether to accept & merge the check-in code |  |  |
| QR-DEF-DEL-06 | Requirement Volatility | The solution’s requirements MUST be able to evolve by mutual consent. | As the cone of uncertainty inherent with the beginning of projects decreases, it is natural that requirements need adjustment. The process of coming to an agreement should be rapid and straightforward. | Requirements and work items are managed using an online backlog and work item tracking service.  An automated process is used to track changes (by whom and when). |  |  |
| QR-DEF-DEL-07 | Application Lifecycle Management Suite (ALM) | The solution SHOULD use am integrated Application Lifecycle Management (ALM) suite to integrate Work Item Management, Configuration and Customisation code repositories, Workflow Management, Integration and Deployment services, testing services. | It’s difficult enough to integrate a system that is to be delivered to prod.  The long-term maintainability of the service should not also depend on having to keep integrating and testing the tools used to manage the discovery, definition, design, development, deployment, defect fixing. | The solution is developed using this organisation default Microsoft DevOps ALM Suite account. |  |  |
| QR-DEF-DEL-08 | Expertise Ratio | The vendor MUST ensure that at least 1/3 of the staff provided for development and ongoing maintenance and improvements are senior developers rated by a 3rd party as being technically proficient in the technologies and tasks being committed to. | In most cases, the effort and time required to perform a task by a certified senior is less than a junior or intermediate developer, or even another senior who is not proficient in the technologies used in a system. | If the product is developed using .NET Core, the developers should be certified as Microsoft Certified Software Developers (MCSD), etc.  If certification is not available, expertise should be determined in a way acceptable to both parties.  If the rate of progress is inconsistent or diminishes, this organisation can request and obtain different developers.  This organisation can request and retain specific developers. |  | J |
| QR-DEF-DEL-09 | Security Training | All supplied production team members MUST be trained to work in a secure manner prior to beginning to work on the project. | Insecure solutions must not be deployed. | Topics covered include:  Agreement as to the extent of the data that requires consideration:  Code Repositories,  Production Data,  Production Data Backups, Configuration settings,  project Work Items  Limiting access to Production Data:  to only service accounts  Using test data only to develop logic  Data in Transit security:  There is no distinction between internal and external components – they are all at risk and require encryption and or other controls to protect communication in between them.  Data at Rest security:  Always use specialised secure storage for confidential configuration credentials.  Always ensuring that confidential information remains within a system and not passed around as messages (in other words, limiting recording of confidential information in emails or attachments and passing them around between developers, etc.). |  |  |
| QR-DEF-DEL-10 | Quality Training | The resources made available for a project MUST be trained to ensure the quality of the solution’s logic and data remain consistently high and incrementally improves over time. | Garbage in, garbage out.  The cost of correcting outweighs the cost of doing things right the first time. | The solution’s developers are trained on:  Code quality:  code repository management via branching  check-in review processes  Component design  OO Development  Coding standards  Data quality:  Integrating systems via API – and avoiding SQL based ETL -- to ensure validation occurs on any migration data.  The solution’s testers are trained on:  developing test scenarios as acceptance criteria of Work Items (User Stories, etc.)  expecting automated tests being developed for them by developers, before they get on with developing code for other stakeholders. |  |  |

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| QR-DEF-REL-16 | Recoverability/BCP | The solution SHOULD rely on a capable DR plan to restore business services within delays specified in the ‘Target Objectives’. | If cloud services are down, and services are impaired in such a way that a DR operation will not resolve the issue, the organisation will have other problems to consume our attention until the cloud becomes available. | RNR |  |  |

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| QR-CP-B-01 | Baseline | Compatibility/Integration/ Organisation Website | Media MUST be developed for the organisation’s main website to redirect it to the PROD-DATA environment’s implementation of digital services. | To improve discoverability, the service must be described and linked to from the organisation’s website. Media (text and images) in languages available on the organisation’s main website is required. |

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| Industry Baseline Quality Requirements | | | | |
| QR-CP-E-01 | **Organisation** | **Compatibility/Integration/ Organisation Website** | Media MUST be developed for the organisation’s main website to redirect it to the PROD-DATA environment’s implementation of digital services. | To improve discoverability, the service must be described and linked to from the organisation’s website. Media (text and images) in languages available on the organisation’s main website is required. |

Production Data will not be used for Testing.

A Test Suite of Data will be developed.

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| QRD-B-03 | Baseline | Portability/Iterative development  of Deployment Pipeline | Customizable and deployable customisation, configuration, and/or custom code MUST be delivered via a pipeline that is iteratively improved to automate all compilation, environment development, deployment, configuration, data restoration, integration and testing: unit, integration and functional/behavioural testing. | The automated delivery pipeline is a system in its own right – if not the *actual* deliverable – which requires its own iterative design, development, testing, maintenance and improvement. |
| QRD-B-04 | **Baseline** | **Portability/Deliverability/Automated Environment creation & deployment** | Customizable and deployable customisation, configuration, and/or custom code **MUST** use a pipeline that first creates and deploys new environment created solely by automation: - BuildTest (BT), DevTest (DT), System Test (ST), User Test (UT), Integration (INT) for external clients to test their API integration, and PROD – and compilation, testing and deployment thereto.  If a pipeline is possible, the automated deployment pipeline must address:   * Compilation, * Running Unit tests, * using Infrastructure as Code to build environments, * Backup the target Data before deployment, * Backup (or locate) the previous deployment package, * Deployment of the current package, * Injection of Configuration settings retrieved from secure storage, * updating Db schemas using Database schemas as Code, * Automatic wakeup of deployment websites * Automated backups of data, * Automated Data Restoration (if Prod), * Running Integration and Functional Tests * Optionally configuring of Automated Migration of Data to other systems (either drop/pickup areas, or APIs of external Data warehouse, SIEMs, etc.) * Upon failure of any tests, roll back the deployment, restore the previous package, restore the previous database backup,   The solution must backup before commencing a rollout, rollback failed deployments, restoring the previously deployed instance. | In order to support Maintainability & Availability quality objectives, the solution must be able to be tested and deployed rapidly. In the event of a disaster, a solution must be able to be rebuilt quickly from scratch.  Minimise the chance that failed deployments make the solution unavailable for significant amounts of times. |
| QRD-B-05 | **Baseline** | **Portability/Tests Definitions first** | Customizable and deployable customisation, configuration, and/or custom code, work items (i.e., development/configuration tasks) **MUST** be completed with test scripts before any customisation and/or development begins – first with automating the test scripts into the deployment pipeline, then developing the system’s logic to pass the pipeline’s automated tests. | Developers must know what they are aiming for, rather than developers and testers both interpreting the intent of Business Analysts separately, putting in the effort to do their individual tasks, only to find out at the end they disagreed as to the BA’s intent. |
| QRD-B-06 | **Baseline** | **Portability/Requirement volatility** | The solution’s functional and quality requirements **MUST** be able to evolve by mutual consent. | As the cone of uncertainty inherent with the beginning of projects decreases, it is natural that requirements need adjustment. The process of coming to an agreement should be rapid and straightforward. |
| QRD-B-07 | **Baseline** | **Portability/Application Lifecycle Management Suite** | Unless agreed otherwise, the solution implementation personnel **MUST** use the organisation endorsable Application Lifecycle Management (ALM) (Azure DevOps) to integrate Work Item Management, Configuration and Customisation code repositories, Workflow Management, Integration and Deployment services, testing services. | It’s difficult enough to integrate a system that is to be delivered to prod.  The long-term maintainability of the service should not depend on having to keep integrating and testing the tools used to manage the discovery, definition, design, development, deployment, defect fixing. Use a Suite that already delivers this, and is used by this organisation’s operations, support and implementation teams. |
| QRD-B-08 | **Baseline** | **Portability/Staff** | 1/3 of provided resources **MUST** have demonstrable relevant senior experience, optionally be certified in the solution’s technologies, and be vetted and accepted by this organisation. | Successful delivery of projects is largely dependent on the attitude, capabilities, and experience of resources involved. |
| QRD-B-09 | **Baseline** | **Portability/Avoid Redevelopment** | Redevelopment **MUST** be minimized. | Correctly managed projects ensure correctness, clarity, and achievability of work items so as to enable understanding and execution without unnecessary correction.  Unless agreed otherwise, corrections and repetition of effort avoidable by automation are at the cost of the solution provider. |

Security:

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| QR-SC-B-01 | Organisation | Security/C&A | Services MUST undergo a security assessment as part of the organisation’s C&A process. | A security assessment by an independent service is required as part of the organisation’s C&A process, which is a prerequisite for CAB to recommend the CDO issue an ATO, required to operate in a PROD-DATA environment. |
| QR-RL-B-04 | **Baseline** | **Reliability/Availability/Disaster Recovery Plan** | The solution **MUST** include an organisation accepted automated Disaster Recovery plan that is capable. | Upon disaster to the system environment and/or production data, the service must be able to be made available to end users within the shortest agreed delay. |

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| QEF-B-03 | Baseline | Correctness | Work Items to deliver configuration and/or customisation MUST be broken down into achievable Testable Tasks before development commences. | User Story Work Items are stakeholder Defined Desires, and therefore loaded with Ambiguity, leading to redevelopment and unnecessary cost. User Stories must be broken down into singular SMART Tasks, each with one or more QA test definitions, before development starts.  The Tests prove the Correctness of the Statements before Development begins. |

Appendices

Appendix A - Document Information

### Images

[Figure 1: TODO Image 2](#_Toc144995112)

### Tables

[Table 1: TODO Table 3](#_Toc145048484)

[Table 2: TODO Table 2 3](#_Toc145048485)

### References

**There are no sources in the current document.**

### Review Distribution

The document was distributed for review as below:

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| Identity | Notes |
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### Audience

The document is technical in nature, but parts are expected to be read and/or validated by a non-technical audience.

### Structure

Where possible, the document structure is guided by either ISO-\* standards or best practice.

### Diagrams

Diagrams are developed for a wide audience. Unless specifically for a technical audience, where the use of industry standard diagram types (ArchiMate, UML, C4), is appropriate, diagrams are developed as simple “box & line” monochrome diagrams.

### Terms

Refer to the project’s Glossary.

##### IT

: acronym for Information, using Technology to automate and facilitate its management.

##### ICT

: acronym for Information & Communication Technology, the domain of defining Information elements and using technology to automate their communication between entities. IT is a subset of ICT.

1. suitable for diagrams use if so desired [↑](#footnote-ref-2)