Enterprise Architecture Policy

for Interoperability and Reuse

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Purpose

To drive **enterprise architecture** based on **industry specifications** so that maximum benefit and return on investment are derived from all technology investments, by introducing ICT solutions and services that are **interoperable** and **reusable** across the Public Administration.

Scope

This Policy applies to the build, upgrade/refresh, procurement and deployment of all ICT Solutions within the Public Administration.

Definitions

Underlined terms are defined in the **Vocabulary** (GMICT X 0003).

Strategic Principles

1. Access of physical or virtual Solution stacks to resources outside any sandboxed environment is to be achieved through the use of Adapters[1] to achieve **abstraction**, **interoperability**, **loose coupling**, **cohesiveness** and **generality**.
2. Solutions shall be able to **share and consume data beyond their boundary**, directly between data consumers and the specific information system through which the domain data originates, through appropriate **industry standard** machine-readable mechanisms, using **open standards** and interoperable engineering principles/practices, for example APIs.
3. Existing **reusable** ICT assets, solutions or functionality owned by and/or in operation within the Public Administration shall be **discoverable** and **interoperable**, and **shared** and **reused** to the maximum extent possible. This includes **service composition** for the creation of new solutions and services in order to transform public services from an organisational- (or silo-) based approach to a service-orientation approach[2].
4. Solutions shall have the ability to **export** their underlying **schema** and **data**.
5. All Solutions shall have a documented **technology roadmap** and **exit strategy**.
6. It is recommended that Public Administration organisations include a reference to this policy in any invitation to tender (ITT) or request for procurement (RFP) as well as in the contractual agreements drawn up with their Solution Providers when procuring ICT solutions or services.
7. This policy shall be read within the context of the GMICT Information Security Policy (GMICT P 0016).
8. The Agent's Chief Technology Officer is responsible for Enterprise Architecture direction within Government.

Enterprise Architecture Documentation and Maintenance

9. Solution owners shall ensure that the Solution Architectures for their critical services are documented, maintained and kept current under version and configuration control. Solution owners shall store this documentation and pass on a copy to the Agent upon request, as part of any architecture assessment required.

Interoperable public services

10. The Public Administration shall aim to facilitate cross-border interoperability with processes of other EU member states, to the maximum extent possible, at the planning, design and implementation stages of public services.
11. Public Administration organisations shall capitalise on investments carried out by the European Commission and EU Member States by seeking to re-use Solutions and services available through the European Commission's Joinup collaborative platform[3] or other collaboration initiatives. Public Administration organisations shall

[1] **Adapter:** A **technical** artefact that allows the interaction between two distinct systems, using standard and secure **protocols**, **specifically**:

- DNS
- HTTP(S)
- FTP(S)
- SSH
- RDP

[2] Service Oriented Architecture (SOA) is an implementation of that concept.

[3] http://joinup.ec.europa.eu/

ensure the existence of appropriate licensing agreements and maintenance agreements.

12. The Public Administration shall prefer the establishment of collaborative agreements and the development of multilateral[4] solutions that are established once and that can be made available to all parties in those projects in which data is exchanged.

Formalised Specifications

13. When adopting formalised specifications, the following principles shall be followed:
    - Formalised specifications are technical building blocks[5] and shall be documented accordingly in solution architectures.
    - Innovative solutions may imply a lower degree of market support and maturity.
    - Any features, additional to the formalised specification, provided by a selected implementation **shall not adversely influence flexibility, interoperability and reuse**.
    - Particularly in scenarios where data shall be exchanged, the replacement of an already-adopted specification by another formalised specification that serves the same or a similar purpose should only be considered if:
        - the implications, costs and benefits associated with introducing the additional specification can be justified
        - compatibility (between alternative specifications) **does not negatively influence flexibility, interoperability and reuse**.
    - Localisation and multilingualism shall be supported, where applicable.

Accredited Data

14. The Agent's Enterprise Architecture function, through the Data Governance Council[6], shall have the role of central coordinator for semantic interoperability and overall Data governance initiatives across the Public Administration.
15. Accredited Datasets shall be accompanied with relevant metadata that, apart from other purposes, shall establish their legal basis, owner, relevant contact points and the scope and applicability of their use within the Public Administration. The Public Administration should adhere to the accredited datasets and follow their respective adoption details.
16. Data shall be kept up-to-date and provisioned by the respective legal owner and/or authorised custodian with reusability in mind. In all major business domains and where appropriate, the Public Administration shall:
    - adopt formalised ontologies to organise data within predefined domains
    - establish expert groups to collaborate with the Agent's Enterprise Architecture function with the task of creating and maintaining the respective business domain's syntactic and semantic assets

[4] Agreed upon or participated in by three or more parties.
[5] For example, TOGAF 9 uses the following repository to keep track of adopted standards, "The Standards Information Base (SIB) captures the standards with which new architectures must comply, which may include industry standards, selected products and services from suppliers, or shared services already deployed within the organization". Extracted from http://pubs.opengroup.org/architecture/togaf9-doc/arch/
[6] Forum for all data governance related issues, recommendations and decisions.

- establish the necessary provisions[7] so that data can at any point in time be extracted in a technology neutral fashion and be provided to authorised consumers.

17. Core Accredited Datasets which have high reusability and interoperability value shall have a minimum set of standard attributes which are:
    - supported and can be used to identify this data across the Public Administration
    - compatible or easily mapped with similar data models or schemas from similar EU initiatives[8]
    - support extended attributes to add context in specific business domains
    - based on relevant applicable standards.

Identity Provisioning

18. To maximise the use of pre-established identity media and registration processes across the Public Administration and the European Union:
    - Preference shall be given to a federated model
    - One logical record set of an individual's identity shall be established
    - Use of identity management processes shall be subject to audit
    - Each organisation shall consider interoperability with EU identity schemes such as Electronic Identification, Authentication and trust Services (eIDAS)[9].
19. The Public Administration shall trust Certificate Authorities that are published in the Trusted Lists of Certification Service Providers[10].

[7] From a technical perspective, data persistence, integration and presentation provisions can be greatly enhanced if defined using Open Specifications.
[8] Such as the European Commission's Semantic initiative, http://joinup.ec.europa.eu
[9] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.257.01.0073.01.ENG
[10] This list is owned and made available by the Malta Communications Authority. For more information visit http://mca.org.mt/tsl

Deviations from GMICT Policy

Instances where it may not be technically possible or cost-effective to comply with a particular GMICT Policy requirement shall be reported as risks at https://rrs.gov.mt to be assessed.

Breaches of GMICT Policy shall be brought to the attention of the respective CIO office in order to determine appropriate corrective action and potential control improvements involving relevant stakeholders, as appropriate.

Issuing Authority

This document has been issued by the **Malta Information Technology Agency**.

Contact Information

Government ICT Policies may be found at https://ictpolicies.gov.mt.

Any suggestions, queries or requests for clarification regarding Government ICT Policies may be forwarded to ictpolicies@gov.mt.