Secure Development

The Secure Development card focuses on general secure software development principles and good practices.

SD.01 - All components, dependencies, and resources are **identified and confirmed** as needed.

SD.02 - The system must always **fail closed** or secure by default.

SD.03 - A **Threat model** of the system has been completed (e.g. STRIDE, or OWASP Cornucopia).

SD.04 - The system considers and mitigates the latest **OWASP Top 10**.

SD.05 - All Operating Systems must be **Hardened**.

SD.06 - All Operating System and Software must be kept **up to date and patched** accordingly.

SD.07 - All sessions are **securely managed**.

SD.08 - The system is **regularly scanned** using a Security Testing tool (e.g. IBM Rational App Scan).

SD.09 - **Anti-Virus Software** must be used to protect against malware.

AH

Authentication

The Authentication card involves ensuring the identification credentials provided are validated and verified.

AN.01 - All passwords follow a **strong password** policy.

AN.02 - The system must enforce users to **change passwords** after a set number of days.

AN.03 - All use of PKI Certificates follows X.509 **Standards**.

AN.04 - **Initial or default** passwords must be changed.

AN.05 - The use of privileged accounts must be **restricted**.

AN.06 - The system must lock a user out after a set number of **failed login attempts**.

AN.07 - Forgotten password functions don't reveal the current password, and use a **secure token** to allow account recovery.

AN.08 - All functions such as change password, or change email address, use the **initial** authentication mechanism.

AN.09 - **Multi-Factor** authentication approaches are used to enhance security.

AN.10 - The system must enforce Authentication controls on the **server side**.

AN.11 - A generic "**Invalid Credential**" message will be displayed to users who do not supply a valid credential.

AH

Authorisation

The Authorisation card ensures that the Authenticated user can access the service or data they are requesting.

AS.01 - The system uses **Whitelist** approaches in favour of Blacklists.

AS.02 - The system must use the principle of "**least privilege**".

AS.03 - The system validates that a user is authorised for the **service** they are requesting.

AS.04 - The system validates that a user is authorised for the **information** they are requesting.

AS.05 - There is a **centralised mechanism** for enforcing authorisation decisions (e.g. Windows Active Directory).

AS.06 - Verify that the access controls enforced are **consistent** on both the client and server side.

AS.07 - The system must enforce Authorisation controls on the **server side**.

AH

Validation

The Validation card focuses on ensuring information is transmitted or transferred securely.

VL.01 - All input to the system must be validated against an **accepted whitelist** (e.g. users can only enter Alphanumeric characters up to a fixed length).

VL.02 - The system must enforce Security Focused Validation controls on the **server side**.

VL.03 - All application text must be **escaped** before return.

VL.04 - Batch input to the system must be validated against a **specified schema**.

VL.05 - Verify all database queries are **parameterised** to avoid injections.

VL.06 - The system must validate all **path and directory** traversals.

AH

Encryption

The Encryption card focuses on managing and implementing cryptographic controls.

EN.01 - **Next Generation Encryption** algorithms must be used, avoiding any depreciated legacy algorithms.

EN.02 - When hashing passwords use a **salt value**.

EN.03 - When hashing passwords use **SHA-256 or SHA-512**.

EN.04 - Only **TLS1.2** web transfer technology can be used, disabling depreciated transfer technologies such as TLS1.1, TLS1.0, and SSL3.0.

EN.05 - All cryptographic keys are securely **managed, stored, and transferred**.

EN.06 - Verify that all random numbers, names, or strings are generated using the cryptographic module's approved **random number generator**.

AH

Monitoring

The Monitoring card focuses on detection, logging, and accountability to ensure non-repudiation of events.

MN.01 - All human create, read, update, and delete (CRUD) **actions** must be logged.

MN.02 - Logs must be stored **externally** to the source system.

MN.03 - All successful and unsuccessful **authentication** attempts must be logged.

MN.04 - All successful and unsuccessful **authorisation** attempts must be logged.

MN.05 - There must be no security **sensitive information** displayed in logs.

MN.06 - Only the **appropriate information** must be contained in logs (e.g. User ID, Activity, and Timestamp).

MN.07 - Only **authorised people** can access specific logs.

AH

Reliability

The Reliability card aims to ensure that the system consistently performs according to its specifications.

RL.01 - Component failure must not result in **service loss**.

RL.02 - Component failure must not result in **data loss**.

RL.03 - A **large incoming message** must be handled without system failure

RL.04 - **Large transaction volumes** must be handled without systems failure.

RL.05 - **Disk failure** must not result in data loss.

RL.06 - Message or Data **outside of expected** values must be appropriately handled.

AH

Availability

The Availability card focuses on ensuring the system services and information remain accessible.

AV.01 - The system must meet its **Availability target** of _____%.

AV.02 - A regular **Backup and Recovery** strategy must be enforced.

AV.03 - A **Disaster Recovery** strategy must be enforced.

AV.04 - Disaster Recovery must **Failover** in _____ hours.

AV.05 - Disaster Recovery must only **lose** _____ minutes of information.

AV.06 - **Single point** of failures must be avoided in the system.

AV.07 - **Multiple instances** of each component must be deployed for resilience.

AH

Performance

The Performance card ensures your system can handle appropriate volumes with acceptable response times.

PR.01 - An **incoming transaction** must be completed in _____ seconds.

PR.02 - A user's **interactive request** must be responded to within _____ seconds.

PR.03 - The system must be able to handle **peak traffic** of _____ transactions per minute.

PR.04 - The system must be able to **store** _____ amount of data.

PR.05 - The system must handle **transaction messages** of a size up to _____.

PR.06 - The system must be able to **scale** to handle increased volumes of _____% within a period of _____.

AH

Data Management

The Data Management card aims to ensure that the data held within the system is handled appropriately.

DM.01 - A **Data Retention and Deletion** strategy must be in place for Application information.

DM.02 - A **secure destruction** strategy must be in place for Hardware.

DM.03 - The system must **avoid duplication** of data.

DM.04 - Sensitive data may be **encrypted at rest**.

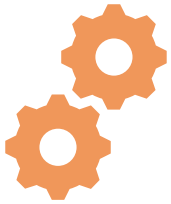
DM.05 - Sensitive data may be **encrypted during transmission**.

DM.06 - **Protective Markings** must be appropriately applied to all stored data.

DM.07 - The system must be compliant with the **Freedom of Information** Act 2000.

DM.08 - The system must be compliant with the **General Data Protection Regulation** 2018.

AH



System Management

The System Management card aims to ensure that the system can be run and managed.

SM.01 - A component failure event must be **alerted** to the support team.

SM.02 - A system patch/upgrade must be able to be installed with **downtime** of no more than _____ mins.

SM.03 - The installed **configuration** must be capable of being easily determined for baseline management.

SM.04 - All transactions must be **logged** to allow for problem determination.

SM.05 - **License compliance** must be demonstrable.

SM.06 - The support team must be able to **report** on meeting response time targets.

SM.07 - The support team must be able to **restore the system** from a backup to a consistent state.

AH

Other

The Other card focuses on any other NFR areas.

OT.01 - Data must be **deleted** after _____ years to meet data retention requirements.

OT.02 - System must meet **regulation** _____ (specific to industry).

OT.03 - The system must be usable by people with **colour blindness**.

OT.04 - The system must be usable by people **with limited eyesight**.

OT.05 - The system must **not flash** more than 3 times in a 1 second period.

AH