Traceability Matrix

Nymi Enterprise Edition
3.3
2021-02-19

Contents

Traceability Matrix

The following table traces each URS item through to a CS and qualification item, where applicable.

Table 1: Trace Matrix

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-001	The Solution shall operate on standard IT infrastructure. (Windows Server 2016).	FS-CFG-01	The server-side components can be installed on bare metal within the customer's environment (Supported Operating Systems: Windows Server 2012 R2, Windows Server 2016)	n/a	n/a	OQ-001 IQ-001 PQ-001	Testing NES operations Verify that the solution is installable in a virtual IT Infrastructure Validate that the NES is functional in the IT Infrastructure

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-002	The Solution supports a deployment of server components in a virtualized environment.	FS-CFG-010	NES and the Nymi Agent are installable on a virtual machine that has connectivity with required components, such as a Domain Controller and AD server. The NES server and Nymi Agent must also have connectivity and access to the user terminals. The Nymi Agent can qualify as a server side component and you can deploy Nymi Agent on a VM.	CS-CFG-010	This functionality is qualified as part of the Product verification and validation testing performed by Nymi.	OQ-001 IQ-001	Testing NES operations Verify that the solution is installable in a virtual IT Infrastructure

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-003	The Solution integrates with single and multi-domain configurations in a single or multi-forest environment, with one-way or two-way trust.	FS-CFG-03FS-CFG-04	Nymi Enterprise Edition shall be deployable in a way that allows a user's Nymi Band to be enrolled once and able to authenticate to systems in multiple domains. NES shall require only one AD account for all domains for which there are trust relationships (requires two way trust between domains).	CS-CFG-03CS-CFG-04	During NES deployment on the `Enterprise` window, there exists the option to specify multiple domains on which an which a user can use an authenticated Nymi Band. The user account that is specified during NES deployment on the `Enterprise` window, in the **`Domain`** table must be a member of one of the domains in the trust.	OQ-002 IQ-002	Testing operations in a multi-domain environment Verify that NES is installable in a multidomain/ multiforest environment.
URS-004	The Solution provides secure communication with endpoints that require credential verification.	FS-MES-006	Integrate the Nymi API into an MES to support the use of a Nymi Band for login.	CS-MES-006	MES applications make use of the intent notification and assert_identity request to implement this functionality.	OQ-012	Testing the Nymi solution with thin clients with NEAs and MES applications.

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description

URS-005	The wearable biometric authentication device does not introduce any unacceptable risks to the health and safety risk of the person who wears the device.	FS-ENV-001
		FS-ENV-002
			The Nymi Band maintains biocompatibility and chemical resistance.
			• The Nymi Band is certified by:
			  • FCC (United States)
			  • CE (Europe)
			  • IC (Canada)
			• The Nymi Band is made of hypoallergenic material.
				CS-SAF-001
				CS-SAF-002
					n/a	n/a	n/a

URS-006	The wearable biometric device functions under personal protective equipment (PPE) suitable for Class A/B, Class C and Class D environments.	FS-NB-019	The Nymi Band NFC antennae supports a read-range that allows detection by an NFC reader through protective clothing and plexiglass coverings.	CS-NB-01	This functionality is qualified as part of the QA and user acceptance testing process for the `Nymi Enterprise Edition` solution.	OQ-012	Testing the Nymi solution with thin clients with NEAs and MES applications.

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-007	The wearable biometric authentication device function shall function for the duration of an Operator shift (8-10hrs) on a single charge.	FS-BAT-001	The Nymi Band supports a 3-day battery life, assuming 10-hour shifts, 900 taps total (300 per shift) with one shift per day.	CS-BAT-001	The Nymi Band supports a 3-day battery life, assuming 10-hour shifts, 900 taps total (300 per shift) with one shift per day.	PQ-002	Test the Nymi Band (8-day test).

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-008	The wearable biometric authentication device function shall be suitable for cleaning with isopropyl alcohol (IPA) 70% wipes	FS-ENV-003	The Nymi Band can be sanitized with an alcohol wipe or spray.	CS-SAF-003	The external surface of the Nymi Band shall be cleanable daily by soap and brush cleaning, 70% isopropanol wipe or 70% isopropanol submersion without any negative impact on reliability or functionality over a 3-year span. The external surface of the Nymi Band shall be durable to daily cleaning by soap and brush, 70% isopropanol wipe or 70% isopropanol submersion without any objectionable degradation in surface finish over a 3-year span.	OQ-008	Testing Nymi Band cleaning.

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-009	The wearable biometric authentication device shall have means for charging.	FS-BAT-005	Nymi Band contains a rechargeable battery and Nymi performs standard benchmark battery life tests that can be used to provide estimations to customers and compare battery life between different firmware releases.	CS-NB-013	The Nymi Band features a rechargeable 48 mAh lithium polymer battery that is charged by using a Nymi-provided charging cradle. The battery life is continually monitored and benchmarked in every subsequent release to meet the requirement.	OQ-007	Testing firmware updates.

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-010	The Solution stores biometric information in an encrypted format.	FS-NB-012	The biometric information that is stored on the Nymi Band consists of a fingerprint template, which is securely stored locally on the micro-controller unit (MCU). The biometric information is permanently deleted when the Nymi Band is security wiped. No biometric information is stored in the server and the fingerprint template never leaves the Nymi Band.	CS-NB-012	The Nymi Band uses an FPC 1321 fingerprint sensor FPC 2050 drive IC. The FPC 1321 is a capacitive fingerprint sensor that uses arrays of tiny capacitor circuits to capture the fingerprint. It has a scratch-resistant coating and is made by Fingerprints Cards AB (1). Physical communication lines (USB, serial) are disabled on the MCU. If the MCU were physically removed from the Nymi Band, physical communication lines remain disabled ensuring no access to MCU memory by design.	n/a	n/a

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-011	The Solution supports the backup and restore of any internal database that is used in the Solution.	FS-DAT-002	Backup and restore procedures for database protection follow corporate policies.	CS-DAT-002	Configure SQL backups in accordance to corporate policies	n/a	n/a

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-012	Biometric information for authentication is not stored centrally.	FS-NB-012	The biometric information that is stored on the Nymi Band consists of a fingerprint template, which is securely stored locally on the micro-controller unit (MCU). The biometric information is permanently deleted when the Nymi Band is security wiped. No biometric information is stored in the server and the fingerprint template never leaves the Nymi Band.	CS-NB-012	The Nymi Band uses an FPC 1321 fingerprint sensor FPC 2050 drive IC. The FPC 1321 is a capacitive fingerprint sensor that uses arrays of tiny capacitor circuits to capture the fingerprint. It has a scratch-resistant coating and is made by Fingerprints Cards AB (1). Physical communication lines (USB, serial) are disabled on the MCU. If the MCU were physically removed from the Nymi Band, physical communication lines remain disabled ensuring no access to MCU memory by design.	OQ-006	Test removal of biometric information from theNymi Band..

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-013	All passwords which are stored by the Solution are encrypted.	FS-NB-016	`Nymi Enterprise Edition` solution ensures that the Nymi Band user is valid in Active Directory. Usernames and passwords are not stored by NES.	CS-NB-016	NES can be configured to check a user's AD user status with every action that they perform with the Nymi Band. If the user is inactive in AD, the user cannot log into the terminal, MES application or perform an e-signature with their Nymi Band. As error is reported and logged.	OQ-004	Testing solution interactions with Active Directory.
URS-014	The Solution provides user authentication to Windows and the MES by using AD credentials.	FS-MES-001	The Active Directory user status is queried for every user authentication provided by a Nymi Band to Windows and MES login.	CS-MES-001	The Evidian ESSO server checks Active Directory every time user authentication is provided, and requests the ciphered user password from Active Directory.	OQ-012	Validate that an NEA can be installed on a Windows 10 thin client and the Nymi Band can be used to perform authentication tasks.
URS-015	The Solution provides a configurable login to the MES Applications with a pop-up windows for authentication.	FS-MES-006	Integrate the Nymi API into an MES to support the use of a Nymi Band for login.	CS-MES-006	MES applications make use of the intent notification and assert_identity request to implement this functionality.	OQ-012	Validate that an NEA can be installed on a Windows 10 thin client and the Nymi Band can be used to perform authentication tasks.

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-016	The Solution provides an automatic user logoff from the Windows session if s/he walks away from a logged in Windows session. Log off will trigger when the wearable biometric device is outside of the BLE range.	FS-MES-008	The System shall provide automatic user logoff from a Windows session if s/he walks away from a logged in Windows session or the Nymi Band deauthenticates.	CS-MES-008	Log off occurs when the authenticated Nymi Band is no longer within BLE range of the Windows system. This includes when the Nymi Band becomes deauthenticated.	OQ-012	Validate that an NEA can be installed on a Windows 10 thin client and the Nymi Band can be used to perform authentication tasks.
URS-017	The solution shall recognize the wearable biometric on the NFC reader if 3 cm of plexiglass is between the NFC reader and the band.	FS-NB-019	The Nymi Band NFC antennae supports a read-range that allows detection by an NFC reader through protective clothing and plexiglass coverings.	CS-NB-01	This functionality is qualified as part of the QA and user acceptance testing process for the `Nymi Enterprise Edition` solution.	OQ-012	Validate that an NEA can be installed on a Windows 10 thin client and the Nymi Band can be used to perform authentication tasks.
URS-018	The Solution provides an automatic user logoff from the Windows session if the operator removes the wearable authentication device/ the device is deauthenticated.	FS-MES-008	The System shall provide automatic user logoff from a Windows session if s/he walks away from a logged in Windows session or the Nymi Band deauthenticates.	CS-MES-008	Log off occurs when the authenticated Nymi Band is no longer within BLE range of the Windows system. This includes when the Nymi Band becomes deauthenticated.	OQ-012	Validate that an NEA can be installed on a Windows 10 thin client and the Nymi Band can be used to perform authentication tasks.

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-019	The Solution provides a self-service administrative interface to associate and disassociate a user with a biometric device.	FS-APP-002	The NES Administrator Console is a web-based application that allows administrators to manage NES policies and users. The EAM Console is provided to manage users and their Nymi Bands.	CS-APP-002	The `NES Administrator Console` is a secure web interface into NES that an NES Administrator accesses from any computer on the network, to manage policies, Nymi Band users and certificates. The EAM Console is a desktop application provided to manage users and Nymi Band assignment.	OQ-010	Test the dissociation of a user from their Nymi Band.
URS-020	The Solution supports NFC taps to signal intent when the Authentication Module is configured to use NFC-only (RFID).	FS-RDP-005	Administrators can install NEAs on Windows 10 thin clients running Citrix (compatibility requirement).	CS-RDP-005	NEAs installed on the thin client require the *nymi_api.dll* file. The *nymi_api.dll* must be compatible with Windows 7 32-bit and 64-bit, and Windows 10 64-bit.	OQ-012	Validate that an NEA can be installed on a Windows 10 thin client and the Nymi Band can be used to perform authentication tasks.

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-021	The Solution supports remote desktop services such as RDP to access and authenticate a remote MES Solution.	FS-RDP-005	Administrators can install NEAs on Windows 10 thin clients running Citrix (compatibility requirement).	CS-RDP-005	NEAs installed on the thin client require the *nymi_api.dll* file. The *nymi_api.dll* must be compatible with Windows 7 32-bit and 64-bit, and Windows 10 64-bit.	OQ-011	Test the installation of an NEA on a Windows 10 thin client.
URS-022	The Solution supports the use of thin clients to remotely access configuration applications and provide e-signatures over RDP and Citrix sessions.	FS-RDP-005	Administrators can install NEAs on Windows 10 thin clients running Citrix (compatibility requirement).	CS-RDP-005	NEAs installed on the thin client require the *nymi_api.dll* file. The *nymi_api.dll* must be compatible with Windows 7 32-bit and 64-bit, and Windows 10 64-bit.	OQ-012	Validate that an NEA can be installed on a Windows 10 thin client and the Nymi Band can be used to perform authentication tasks.
URS-023	The Solution only provides access to authorized users.	FS-MES-001	The Active Directory user status is queried for every user authentication provided by a Nymi Band to Windows and MES login.	CS-MES-001	The Evidian ESSO server checks Active Directory every time user authentication is provided, and requests the ciphered user password from Active Directory.	OQ-012	Validate that an NEA can be installed on a Windows 10 thin client and the Nymi Band can be used to perform authentication tasks.

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-024	The Solution provides an administrator with the ability to view and modify Policies for the wearable authentication device.	FS-APP-002	The NES Administrator Console is a web-based application that allows administrators to manage NES policies and users. The EAM Console is provided to manage users and their Nymi Bands.	CS-APP-002	The `NES Administrator Console` is a secure web interface into NES that an NES Administrator accesses from any computer on the network, to manage policies, Nymi Band users and certificates. The EAM Console is a desktop application provided to manage users and Nymi Band assignment.	OQ-002	Testing operations in a multi-domain environment.

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-025	Operators shall be able to visually check battery charge on the wearable device.	FS-BAT-006	Users can accurately tell whether their Nymi Band's battery is Low, Medium, or High from the battery indicator on the screen.	CS-BAT-006	The Nymi Band hardware utilizes a fuel gauge chip which tracks the state of charge of the battery to a roughly 1% accuracy. This state of charge is read in firmware and mapped out to a battery charge indicator on the band’s screen, which shows 4 levels of charge (3 bars, plus empty battery).	OQ-007	Testing firmware updates.
URS-026	Operators shall be able to visually check the authentication status of the wearable biometric device. (authenticated or de-authenticated)	FS-PHY-007	The Nymi Band has a display which provides information to the user.	CS-PHY-007	Display information such as battery life, band label, and authentication status (authenticated/ deauthenticated).	OQ-005	Testing that the Nymi solution has an interface for enrollment.

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-027	The Solution provides an administrator with the ability to view and print reports that provide information about additions and modifications of users and device associations.	FS-SAF-005	Evidian maintains an audit log of Nymi Band user assignments	CS-SAF-005	Evidian stores audit information in Evidian's SQL sever database.	OQ-009	Testing Nymi solution auditing.
URS-028	The Solution provides the ability to report on an authentication action, the user that performed the action, the date of the action and the time of the action, historically and in real time.	FS-SAF-005	Evidian maintains an audit log of Nymi Band user assignments	CS-SAF-005	Evidian stores audit information in Evidian's SQL sever database.	OQ-009	Testing Nymi solution auditing.
URS-029	The Solution shall be configured so that there is no single point of failure.	FS-CFG-02	Create a document that describes the steps to deploy Nymi Agent so that it can achieve 99.9% availability	CS-CFG-02	This information is covered in the Nymi Enterprise Edition Deployment Guide.	IQ-003	Installation Qualification of NEE 3.3 HA

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-030	An alternative method of authentication for the user shall be available for the operator if the wearable biometric is unavailable.	FS-NB-015 FS-APP-001	`Nymi Enterprise Edition` allows authentication to the Nymi Band by biometrics or an external authenticator, such as Active Directory. The `Nymi Band Application` is a graphical user interface that allows users to enroll a Nymi Band and authenticate their Nymi Band using corporate credentials.	CS-NB-015 DS-APP-001	NES Administrator can configure the default policy to allow an External Authenticator for authentication. After a user logs in to the Nymi Band Application with a valid AD username and password, the application provides users with step-by-step instructions to enroll their Nymi Band. After users have enrolled their Nymi Band, they can use the Nymi Band Application to authenticate the Nymi Band by their Active Directory username and password if active policy on NES is configured to support corporate credential authentication.	OQ-003 OQ-005	Testing that the solution supports multiple authentication methods.

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-031	The Supplier provides maintenance and support for the Solution.	n/a	n/a	n/a	n/a	n/a	n/a
URS-032	The Supplier provides administrator and user training documents.	n/a	n/a	n/a	n/a	n/a	n/a
URS-033	The Supplier is able to license and support the software.	n/a	n/a	n/a	n/a	n/a	n/a
URS-034	The Supplier meets the requirements for the Supplier Evaluation Process.	n/a	n/a	n/a	n/a	n/a	n/a
URS-035	A Service Level Agreement shall be implemented with the Supplier.	n/a	n/a	n/a	n/a	n/a	n/a

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-036	The Supplier has a mechanism in place to provide notification of software changes, including software upgrades, hotfixes, and patches.	n/a	n/a	n/a	n/a	n/a	n/a
URS-037	The Supplier shall provide specifications for the function and design of the Solution to satisfy applicable requirements in the URS.	n/a	n/a	n/a	n/a	n/a	n/a
URS-038	The Supplier shall provide documentation in the form of system manuals and software administration manuals in electronic format, at a minimum, where applicable.	n/a	n/a	n/a	n/a	n/a	n/a

URS #	User Specification	FS #	Functional Specification	CS #	Configuration Specification	TR #	TR Description
URS-039	The Solution provides a mechanism to associate Nymi Bands to a single user.	FS-APP-003	The solution provides the `Nymi Band Application` to assign a user to a Nymi Band in environments where Evidian and NEAs developed with the `Nymi SDK` coexist.	DS-APP-001	Nymi provides the `Nymi Band Application`, which facilitates enrollment for Evidian and Nymi-direct integration environments during one enrollment. The `Nymi Band Application` will use appropriate Evidian WGSS API methods to populate the both Evidian database and NES with the `Nymi Band Application` and user data.	OQ-002 OQ-005	Testing operations in a multi-domain environment. Testing that the Nymi solution has an interface for enrollment.

Published in Canada.
Nymi Inc.
Toronto, Ontario
www.nymi.com