Manufacturer Disclosure Statement for Medical Device Security – MDS^2

DEVICE DESCRIPTION

Device Category	Manufacturer	Document ID	Document Release Date
Ultrasound Imaging System	EchoNous, Inc.	D007127	11th May,2021

Device Model	Software Revision	Software Release Date
EchoNous Bladder / EchoNous Vein / Uscan	5.1.0	11th May,2021

	Company Name	Manufacturer Contact Information
Manufacturer or Representative Contact Information	EchoNous, Inc.	8310 154th Ave NE, Ste 200 Redmond WA 98052-3864
	Representative Name/Position	Tel: 1-844-854-0800 | richard.torres@echonous.com
	Richard Torres / Customer Support Admin	

Intended use of **device** in network-connected environment:

The system is for non-invasive imaging of the human body for the following applications: Abdominal, Musculoskeletal, Pediatric, Small Organ and Vascular Access. The system can also be used to obtain an image of the bladder that is used to automatically determine bladder volume. The device may receive software updates over the network. The device may transmit medical record data to a remote system.

MANAGEMENT OF PRIVATE DATA

	Refer to Section 2.3.2 of this standard for the proper interpretation of information requested in this form.	Yes, No, N/A, or See Note	Note #
A	Can this **device** display, transmit, or maintain **private data** (including **electronic Protected Health Information** [ePHI])?	Yes	1
B	Types of **private data** elements that can be maintained by the **device**:		
B.1	Demographic (e.g., name, address, location, unique identification number)?	Yes	2
B.2	Medical record (e.g., medical record #, account #, test or treatment date, **device** identification number)?	Yes	2
B.3	Diagnostic/therapeutic (e.g., photo/radiograph, test results, or physiologic data with identifying characteristics)?	Yes	2
B.4	Open, unstructured text entered by **device user/operator**?	Yes	2
B.5	**Biometric data**?	No	—
B.6	Personal financial information?	No	—
C	Maintaining **private data** - Can the **device**:		
C.1	Maintain **private data** temporarily in volatile memory (i.e., until cleared by power-off or reset)?	Yes	3
C.2	Store **private data** persistently on local media?	Yes	3
C.3	Import/export **private data** with other systems?	Yes	3
C.4	Maintain **private data** during power service interruptions?	Yes	3
D	Mechanisms used for the transmitting, importing/exporting of **private data** – Can the **device**:		
D.1	Display private data (e.g., video display, etc.)?	Yes	4
D.2	Generate hardcopy reports or images containing **private data**?	Yes	4
D.3	Retrieve **private data** from or record **private data** to **removable media** (e.g., disk, DVD, CD-ROM, tape, CF/SD card, memory stick, etc.)?	No	—
D.4	Transmit/receive or import/export **private data** via dedicated cable connection (e.g., IEEE 1073, serial port, USB, FireWire, etc.)?	Yes	4
D.5	Transmit/receive **private data** via a wired network connection (e.g., LAN, WAN, VPN, intranet, Internet,	No	—
D.6	Transmit/receive **private data** via an integrated wireless network connection (e.g., WiFi, Bluetooth, infrared,	Yes	4
D.7	Import **private data** via scanning?	No	—
D.8	Other?	N/A	—

Management of Private Data notes:

1. The device can be configured so no ePHI data is displayed or stored. However, it is also possible to configure the system to display, store and send ePHI data.
2. ePHI data displayed and stored - Patient name, unique ID, Organisation name, test date, ultrasound images, unstructured notes and annotations.
3. Where ePHI is entered, it is stored in volatile memory for the duration of the exam (study), saved persistently on local media when local storage is enabled, and sent to remote storage when remote storage is configured.
4. For the duration of an exam, if ePHI is entered it is displayed on the local display. Hardcopy reports can be generated with the ePHI information. Where local storage is enabled, the ePHI information can be accessed via a USB cable from a host computer and appropriate security settings should be enforced (setting an Android tablet display password).

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SECURITY CAPABILITIES

	Refer to Section 2.3.2 of this standard for the proper interpretation of information requested in this form.	Yes, No, N/A, or See Note	Note #
1	**AUTOMATIC LOGOFF (ALOF)**		
	The **device**'s ability to prevent access and misuse by unauthorized **users** if **device** is left idle for a period of time.		
1-1	Can the **device** be configured to force reauthorization of logged-in **user**(s) after a predetermined length of inactivity (e.g., auto-logoff, session lock, password protected screen saver)?	Yes	5
1-1.1	Is the length of inactivity time before auto-logoff/screen lock **user** or administrator configurable? (Indicate time [fixed or configurable range] in notes.)	Yes	5
1-1.2	Can auto-logoff/screen lock be manually invoked (e.g., via a shortcut key or proximity sensor, etc.) by the **user**?	Yes	5
ALOF notes:	5. The system provides the ability to configure a system-wide (rather than user-specific) screen lock that is configurable via the system setting.		
2	**AUDIT CONTROLS (AUDT)**		
	The ability to reliably audit activity on the **device**.		
2-1	Can the **medical device** create an **audit trail**?	No	__
2-2	Indicate which of the following events are recorded in the audit log:		
2-2.1	Login/logout	N/A	__
2-2.2	Display/presentation of data	N/A	__
2-2.3	Creation/modification/deletion of data	N/A	__
2-2.4	Import/export of data from **removable media**	N/A	__
2-2.5	Receipt/transmission of data from/to external (e.g., network) connection	N/A	__
2-2.5.1	**Remote service** activity	N/A	__
2-2.6	Other events? (describe in the notes section)	N/A	__
2-3	Indicate what information is used to identify individual events recorded in the audit log:		
2-3.1	**User** ID	N/A	__
2-3.2	Date/time	N/A	__
AUDT notes:			
3	**AUTHORIZATION (AUTH)**		
	The ability of the device to determine the authorization of users.		
3-1	Can the **device** prevent access to unauthorized **users** through **user** login requirements or other mechanism?	Yes	6
3-2	Can **users** be assigned different privilege levels within an application based on 'roles' (e.g., guests, regular **users**, power **users**, administrators, etc.)?	Yes	6
3-3	Can the **device** owner/**operator** obtain unrestricted administrative privileges (e.g., access operating system or application via local root or admin account)?	No	6
AUTH notes:	6. The system provides a system-wide screen lock to prevent unauthorized access. Access to PHI information may be controlled to individual user logins. Access to Ultrasound scanning functionality may be limited via a password. Access to settings may be limited via an administrator password.		

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4	**CONFIGURATION OF SECURITY FEATURES (CNFS)**		
	The ability to configure/re-configure **device security capabilities** to meet **users'** needs.		
4-1	Can the **device** owner/operator reconfigure product **security capabilities**?	Yes	7
CNFS notes:	7. The device administrator may configure a number of settings/restrictions via the settings.		
5	**CYBER SECURITY PRODUCT UPGRADES (CSUP)**		
	The ability of on-site service staff, remote service staff, or authorized customer staff to install/upgrade **device**'s security patches.		
5-1	Can relevant OS and **device** security patches be applied to the **device** as they become available?	Yes	—
5-1.1	Can security patches or other software be installed remotely?	No	—
CSUP notes:			
6	**HEALTH DATA DE-IDENTIFICATION (DIDT)**		
	The ability of the **device** to directly remove information that allows identification of a person.		
6-1	Does the **device** provide an integral capability to de-identify **private data**?	See Note	8
DIDT notes:	8. De-identification is performed on data sent to the manufacturer to improve the product. The sending of this data requires an opt-in from the customer.		
7	**DATA BACKUP AND DISASTER RECOVERY (DTBK)**		
	The ability to recover after damage or destruction of **device** data, hardware, or software.		
7-1	Does the **device** have an integral data backup capability (i.e., backup to remote storage or **removable media** such as tape, disk)?	No	—
DTBK notes:			
8	**EMERGENCY ACCESS (EMRG)**		
	The ability of **device users** to access **private data** in case of an emergency situation that requires immediate access to stored **private data**.		
8-1	Does the **device** incorporate an **emergency access** ("break-glass") feature?	No	—
EMRG notes:			
9	**HEALTH DATA INTEGRITY AND AUTHENTICITY (IGAU)**		
	How the **device** ensures that data processed by the **device** has not been altered or destroyed in an unauthorized manner and is from the originator.		
9-1	Does the **device** ensure the integrity of stored data with implicit or explicit error detection/correction technology?	Yes	9
IGAU notes:	9. Implicit error detection/correction is implemented in the internal flash storage file system, and the wireless communication protocols supported.		

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10	**MALWARE DETECTION/PROTECTION (MLDP)**		
	The ability of the **device** to effectively prevent, detect and remove malicious software (**malware**).		
10-1	Does the **device** support the use of **anti-malware** software (or other **anti-malware** mechanism)?	No	__
	10-1.1 Can the **user** independently re-configure **anti-malware** settings?	N/A	__
	10-1.2 Does notification of **malware** detection occur in the **device user** interface?	N/A	__
	10-1.3 Can only manufacturer-authorized persons repair systems when **malware** has been detected?	N/A	__
10-2	Can the device owner install or update **anti-virus software**?	No	__
10-3	Can the device owner/**operator** (technically/physically) update virus definitions on manufacturer-installed **anti-virus software**?	No	__
MLDP notes:			
11	**NODE AUTHENTICATION (NAUT)**		
	The ability of the **device** to authenticate communication partners/nodes.		
11-1	Does the **device** provide/support any means of node authentication that assures both the sender and the recipient of data are known to each other and are authorized to receive transferred information?	No	10
NAUT notes:	10. Communication to the software update server uses a key to authenticate the client device.		
12	**PERSON AUTHENTICATION (PAUT)**		
	Ability of the **device** to authenticate **users**		
12-1	Does the **device** support **user**/**operator**-specific username(s) and password(s) for at least one **user**?	Yes	11
	12-1.1 Does the device support unique **user**/**operator**-specific IDs and passwords for multiple users?	Yes	11
12-2	Can the **device** be configured to authenticate **users** through an external authentication service (e.g., MS Active Directory, NDS, LDAP, etc.)?	No	
12-3	Can the **device** be configured to lock out a **user** after a certain number of unsuccessful logon attempts?	No	
12-4	Can default passwords be changed at/prior to installation?	N/A	12
12-5	Are any shared **user** IDs used in this system?	Yes	13
12-6	Can the **device** be configured to enforce creation of **user** account passwords that meet established complexity rules?	No	
12-7	Can the **device** be configured so that account passwords expire periodically?	No	__
PAUT notes:	11. Access to PHI data may be controlled through user-specific usernames and passwords. 12. There are no default passwords. 13. The system allows both an administrator password, and a password to limit access to Ultrasound scanning functionality. These are password only, and thus shared.		
13	**PHYSICAL LOCKS (PLOK)**		
	Physical locks can prevent unauthorized **users** with physical access to the **device** from compromising the integrity and confidentiality of **private data** stored on the **device** or on **removable media**.		
13-1	Are all **device** components maintaining **private data** (other than **removable media**) physically secure (i.e., cannot remove without tools)?	Yes	__
PLOK notes:			

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14	**ROADMAP FOR THIRD PARTY COMPONENTS IN DEVICE LIFE CYCLE (RDMP)**		
	Manufacturer's plans for security support of 3rd party components within **device** life cycle.		
14-1	In the notes section, list the provided or required (separately purchased and/or delivered) operating system(s) - including version number(s).	N/A	
14-2	Is a list of other third party applications provided by the manufacturer available?	No	

RDMP notes:

15	**SYSTEM AND APPLICATION HARDENING (SAHD)**		
	The **device**'s resistance to cyber attacks and **malware**.		
15-1	Does the **device** employ any hardening measures? Please indicate in the notes the level of conformance to any industry-recognized hardening standards.	Yes	14
15-2	Does the **device** employ any mechanism (e.g., release-specific hash key, checksums, etc.) to ensure the installed program/update is the manufacturer-authorized program or software update?	Yes	15
15-3	Does the **device** have external communication capability (e.g., network, modem, etc.)?	Yes	16
15-4	Does the file system allow the implementation of file-level access controls (e.g., New Technology File System (NTFS) for MS Windows platforms)?	Yes	
15-5	Are all accounts which are not required for the **intended use** of the **device** disabled or deleted, for both **users** and applications?	N/A	
15-6	Are all shared resources (e.g., file shares) which are not required for the **intended use** of the **device**, disabled?	Yes	17
15-7	Are all communication ports which are not required for the **intended use** of the **device** closed/disabled?	Yes	17
15-8	Are all services (e.g., telnet, file transfer protocol [FTP], internet information server [IIS], etc.), which are not required for the **intended use** of the **device** deleted/disabled?	Yes	17
15-9	Are all applications (COTS applications as well as OS-included applications, e.g., MS Internet Explorer, etc.) which are not required for the **intended use** of the **device** deleted/disabled?	Yes	
15-10	Can the **device** boot from uncontrolled or **removable media** (i.e., a source other than an internal drive or memory component)?	No	
15-11	Can software or hardware not authorized by the **device** manufacturer be installed on the device without the use of tools?	No	

SAHD notes:
14. The device has no incoming ports open and has unused applications disabled through the use of the device administrator feature of Android. There is no specific conformance to any particular hardening standards.
15. Signatures of all appications are checked before installation.
16. The device has Wi-Fi.
17. The device provides no services (no incoming ports).

16	**SECURITY GUIDANCE (SGUD)**		
	The availability of security guidance for **operator** and administrator of the system and manufacturer sales and service.		
16-1	Are security-related features documented for the **device user**?	Yes	18
16-2	Are instructions available for **device**/media sanitization (i.e., instructions for how to achieve the permanent deletion of personal or other sensitive data)?	Yes	18

18. Security options are explained in the system user manual (P003948).

SGUD notes:

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17	**HEALTH DATA STORAGE CONFIDENTIALITY (STCF)**		
	The ability of the **device** to ensure unauthorized access does not compromise the integrity and confidentiality of **private data** stored on **device** or **removable media**.		
17-1	Can the **device** encrypt data at rest?	Yes	19
STCF notes:	19. The internal storage is encrypted and is protected via the device password.		
18	**TRANSMISSION CONFIDENTIALITY (TXCF)**		
	The ability of the **device** to ensure the confidentiality of transmitted **private data**.		
18-1	Can **private data** be transmitted only via a point-to-point dedicated cable?	No	—
18-2	Is **private data** encrypted prior to transmission via a network or **removable media**? (If yes, indicate in the notes which encryption standard is implemented.)	Yes	20
18-3	Is **private data** transmission restricted to a fixed list of network destinations?	No	—
TXCF notes:	20. All data transmitted via Wi-Fi is protected via Wi-Fi security mechanisms. Other security is protocol dependent. BOX export and Signostics upload is protected via HTTPS.		
19	**TRANSMISSION INTEGRITY (TXIG)**		
	The ability of the **device** to ensure the integrity of transmitted **private data**.		
19-1	Does the **device** support any mechanism intended to ensure data is not modified during transmission? (If yes, describe in the notes section how this is achieved.)	Yes	21
TXIG notes:	21. Some file types transmitted (such as PNG) include checksums. The USB protocol and Wi-Fi protocols include individual packet checksums.		
20	**OTHER SECURITY CONSIDERATIONS (OTHR)**		
	Additional security considerations/notes regarding **medical device** security.		
20-1	Can the **device** be serviced remotely?	No	—
20-2	Can the **device** restrict remote access to/from specified devices or **users** or network locations (e.g., specific IP addresses)?	No	—
20-2.1	Can the **device** be configured to require the local **user** to accept or initiate remote access?	N/A	—
OTHR notes:			