Manufacturer Disclosure Statement for Medical Device Security – MDS^2

DEVICE DESCRIPTION

Device Category 16-247	Manufacturer Candelis, Inc.	Document ID N/A	Document Release Date N/A
Device Model ImageGrid DICOM Appliance	Software Revision 3.2		Software Release Date 1/6/2022

Manufacturer or Representative Contact Information	Company Name Candelis, Inc.	Manufacturer Contact Information 4701 Von Karman Ave., Suite 200 Newport Beach, CA 92660
	Representative Name/Position Daniel Cossack, Sr. Systems Engineer	

Intended use of **device** in network-connected environment:
ImageGrid DICOM Appliance is a storage/server system featuring advanced rule-based automated study/image routing, pre and post fetching, image management and image viewing.

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	
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	
	B.2	Medical record (e.g., medical record #, account #, test or treatment date, **device** identification number)?	Yes	
	B.3	Diagnostic/therapeutic (e.g., photo/radiograph, test results, or physiologic data with identifying characteristics)?	Yes	
	B.4	Open, unstructured text entered by **device user/operator**?	Yes	
	B.5	**Biometric data**?	Yes	
	B.6	Personal financial information?	N/A	
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	
	C.2	Store **private data** persistently on local media?	Yes	
	C.3	Import/export **private data** with other systems?	Yes	
	C.4	Maintain **private data** during power service interruptions?	Yes	
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	
	D.2	Generate hardcopy reports or images containing **private data**?	Yes	
	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.)?	Yes	
	D.4	Transmit/receive or import/export **private data** via dedicated cable connection (e.g., IEEE 1073, serial port, USB, FireWire, etc.)?	Yes	
	D.5	Transmit/receive **private data** via a wired network connection (e.g., LAN, WAN, VPN, intranet, Internet, etc.)?	Yes	
	D.6	Transmit/receive **private data** via an integrated wireless network connection (e.g., WiFi, Bluetooth, infrared, etc.)?	No	
	D.7	Import **private data** via scanning?	Yes	
	D.8	Other?	N/A	

Management of Private Data notes:

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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	__
	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	__
	1-1.2 Can auto-logoff/screen lock be manually invoked (e.g., via a shortcut key or proximity sensor, etc.) by the **user**?	No	__
ALOF notes:			
2	**AUDIT CONTROLS (AUDT)** The ability to reliably audit activity on the **device**.		
2-1	Can the **medical device** create an **audit trail**?	Yes	__
2-2	Indicate which of the following events are recorded in the audit log:		
	2-2.1 Login/logout	Yes	__
	2-2.2 Display/presentation of data	Yes	__
	2-2.3 Creation/modification/deletion of data	Yes	__
	2-2.4 Import/export of data from **removable media**	Yes	__
	2-2.5 Receipt/transmission of data from/to external (e.g., network) connection	Yes	__
	2-2.5.1 **Remote service** activity	No	__
	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	Yes	__
	2-3.2 Date/time	Yes	__
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	__
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	__
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	__
AUTH notes:			

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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	__
CNFS notes:			
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?	Yes	__
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**?	Yes	__
DIDT notes:			
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)?	Yes	__
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?	Yes	__
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	__
IGAU notes:			

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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?	No	__
10-1.2	Does notification of **malware** detection occur in the **device user** interface?	No	__
10-1.3	Can only manufacturer-authorized persons repair systems when **malware** has been detected?	Yes	__
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?	Yes	__
NAUT notes:			
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	__
12-1.1	Does the device support unique **user/operator**-specific IDs and passwords for multiple users?	Yes	__
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?	Yes	__
12-4	Can default passwords be changed at/prior to installation?	Yes	__
12-5	Are any shared **user** IDs used in this system?	Yes	__
12-6	Can the **device** be configured to enforce creation of **user** account passwords that meet established complexity rules?	Yes	__
12-7	Can the **device** be configured so that account passwords expire periodically?	Yes	__
PAUT notes:			
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).	See Note	_1_
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.	See Note	_2_
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	__
15-3	Does the **device** have external communication capability (e.g., network, modem, etc.)?	Yes	__
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)?	No	__
15-5	Are all accounts which are not required for the **intended use** of the **device** disabled or deleted, for both **users** and applications?	Yes	__
15-6	Are all shared resources (e.g., file shares) which are not required for the **intended use** of the **device**, disabled?	Yes	__
15-7	Are all communication ports which are not required for the **intended use** of the **device** closed/disabled?	Yes	__
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	__
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)?	Yes	__
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:			
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	__
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	__
SGUD notes:			

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		Yes, No, N/A, or See Note	Note #
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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	__
STCF notes:			
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.)	See Note	_3_
18-3	Is **private data** transmission restricted to a fixed list of network destinations?	Yes	__
TXCF notes:			
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	_4_
TXIG notes:			
20	**OTHER SECURITY CONSIDERATIONS (OTHR)**		
	Additional security considerations/notes regarding **medical device** security.		
20-1	Can the **device** be serviced remotely?	Yes	__
20-2	Can the **device** restrict remote access to/from specified devices or **users** or network locations (e.g., specific IP addresses)?	Yes	__
	20-2.1 Can the **device** be configured to require the local **user** to accept or initiate remote access?	Yes	__

1. Ubuntu 20.04 LTS
2. Monthly Nessus vulnerability scans are performed, any risks higher than "low" are addressed by a security update. Only Candelis applications are allowed on the device (it is a closed system from this perspective).
3. This is configurable by the end-user (DICOM and proprietary communications can be encrypted).
4. The TCP/IP protocol is used in all network transmissions, which provides a level of error checking inherently.

OTHR notes: