APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0510 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Siemens Healthcare GmbH, Diagnostic Imaging, Computed Tomography

Manufacturer's Technical Representative: Ottmar Förstel

Mailing Address: Siemensstr. 3, 91301 Forchheim, Germany

Telephone: +49 9191 – 18 8761 Email: ottmar.foerstel@siemens.com

Product Information

Product Name: SOMATOM Definition Flash, AS, and AS Open CT Systems

Product Type: Computed Tomography (CT) medical imaging system

Product Model Number: See Attachment
(List all unique product identification numbers and/or part numbers)

General Description: Multiple component system for producing Computed Tomography (CT) medical images for a wide variety of medical diagnostic results. Patient weight shall not exceed 308 lbs.

Mounting Description: Rigid floor mounted.

Applicant Information

Applicant Company Name: W.E. Gundy & Associates, Inc.

Contact Person: Travis Soppe, SE

Mailing Address: 250 Bobwhite Ct, Suite 100, Boise, ID 83706

Telephone: (208) 342-5898 Ext. 115 Email: tsoppe@wegai.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant: Travis Soppe Date: 2-22-2017

Title: Vice President Company Name: W.E. Gundy & Associates, Inc.

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: W.E. Gundy & Associates, Inc.

Name: Travis Soppe, SE California License Number: S6115

Mailing Address: 205 Bobwhite Ct, Suite 100, Boise, ID 83706

Telephone: (208) 342-5898 Ext. 115 Email: tsoppe@wegai.com

Supports and Attachments Preapproval

☐ Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)

☒ Supports and attachments are not preapproved

Certification Method

☒ Testing in accordance with: ☒ ICC-ES AC156

☐ Other (Please Specify): _____

Testing Laboratory

Company Name: IABG mbH

Contact Name: Dr. Steffen Roedling

Mailing Address: Einsteinstrasse 20, Ottobrunn, Germany D-85521

Telephone: +49 (0) 89 / 6088-2052 Email: roedling@iabg.de

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = See attachment

S_{DS} (Design spectral response acceleration at short period, g) = 2.0 for z/h = 1.0 and 2.5 for z/h = 0

a_p (In-structure equipment or component amplification factor) = See attachment

R_p (Equipment or component response modification factor) = See attachment

Ω_0 (System overstrength factor) = See attachment

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0 at S_{DS} = 2.0g and 0 at S_{DS} = 2.5g

Equipment or Component Natural Frequencies (Hz) = See attachment

Overall dimensions and weight (or range thereof) = See attachment

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

Design Basis of Equipment or Components (V/W) =

S_{DS} (Design spectral response acceleration at short period, g) =

S_{D1} (Design spectral response acceleration at 1 second period, g) =

R (Response modification coefficient) =

Ω_0 (System overstrength factor) =

C_d (Deflection amplification factor) =

I_p (Importance factor) = 1.5

Height to Center of Gravity above base =

Equipment or Component Natural Frequencies (Hz) =

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☐ Calculations ☒ Manufacturer's Catalog

☒ Other(s) (Please Specify): Certified System Matrix, UUT Summary Sheets, Subcomponent Certification Letter

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature: Timothy J. Piland Date: April 7, 2017

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = See Above z/h = See Above

Condition of Approval (if applicable): Patient weight shall not exceed 308 lbs.
Approval is limited to units identical to tested units.

SIEMENS HEALTHCARE GmbH
SPECIAL SEISMIC CERTIFICATION
CERTIFIED SYSTEM AND COMPONENTS

Manufacturer: Siemens Healthcare GmbH

System: SOMATOM Definition Flash, AS, and AS Open

System Component	Siemens Part Number	Dimensions (in)			Weight (lb)	Mounting	UUT
		Width	Length	Height			
SOMATOM Definition Flash	10430610	91.1	47.4	78.0	5614	floor	UUT-1
SOMATOM Definition AS	8098555	92.9	36.7	78.0	4554	floor	UUT-2
SOMATOM Definition AS Open	8098555	92.9	36.7	78.0	4554	floor	UUT-3
PHS 4 - Patient Table	8097144	95.7-158.7	29.5	18.9-36.2	933[2)]	floor	UUT-4
MPT 2 - Patient Table	8097102	95.7-174.4	29.5	21.6-36.2	1311[2)]	floor	UUT-5
Image Control System Celsius M720	10864203	24.4	9.8	19.7	34	floor	UUT-2B[3)]
Image Reconstruction System IRSmx 4d	10890634	30.3	10.1	20.0	58	floor	UUT-4B[3)]
Image Reconstruction System IRSmx4c	10890635	30.3	10.1	20.0	53	floor	UUT-5B[3)]

[1)] All components are manufactured by Siemens Healthcare GmbH unless noted.The part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component within the tested units.

[2)] Patient table weight does not include 308lb simulated patient weight included during seismic test.

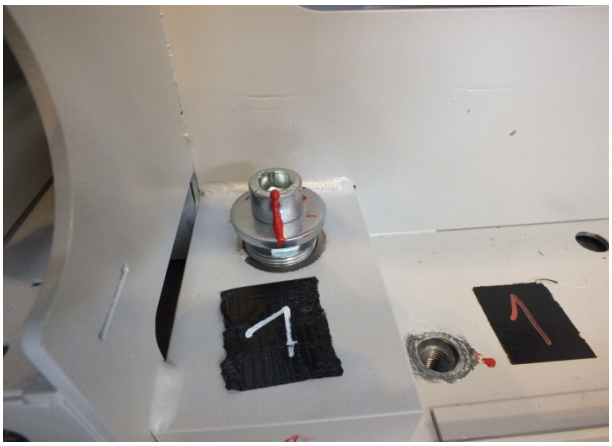
[3)] B designation on UUT's indicates that the tests were performed seperately from the first series of testing and some of the UUT numbers were the same for different tested components.

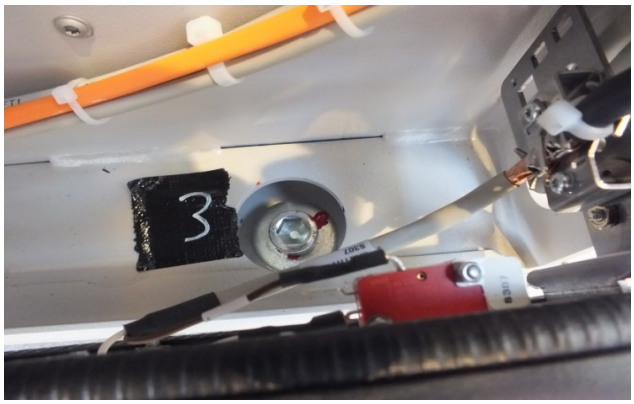
SEISMIC CERTIFICATION LIMITS

System Component	Code	S_{DS} (g)	z / h	I_P	a_P	R_P	Ω_0	F_P / W_P
SOMATOM Definition Flash	CBC 2016 ASCE7-10	2.0	1.0	1.50	2.5	6.0	1.5	1.50
		2.5	0					1.13
SOMATOM Definition AS		2.0	1.0	1.50	1.0	1.5	1.5	2.40
		2.5	0					1.13
SOMATOM Definition AS Open		2.0	1.0	1.50	1.0	1.5	1.5	2.40
		2.5	0					1.13
PHS 4 - Patient Table		2.0	1.0	1.50	1.0	1.5	1.5	2.40
		2.5	0					1.13
MPT 2 - Patient Table		2.0	1.0	1.50	1.0	1.5	1.5	2.40
		2.5	0					1.13
Image Control System Celsius M720		2.0	1.0	1.50	1.0	2.5	2.0	1.44
		2.5	0					1.13
Image Reconstruction System IRSmx4d		2.0	1.0	1.50	1.0	2.5	2.0	1.44
		2.5	0					1.13
Image Reconstruction System IRSmx4c		2.0	1.0	1.50	1.0	2.5	2.0	1.44
		2.5	0					1.13

UUT-1	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mounted with 4 - M16 bolts





Manufacturer: Siemens Healthcare GmbH

Component: SOMATOM Definition Flash	**Model / Serial Number:** 10430610 / 2210
UUT Function: Continuous rotating dectector for high-resolution data acquisition	
UUT Description: Component of SOMATOM Definition Flash CT System	
Test Location: IABG mbH, Germany	**Test Date:** August 2016

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
5,614	91.1"	47.4"	78.0"	13.1	24.2	>33

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-2	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mounted with 4 - M16 bolts

Manufacturer: Siemens Healthcare GmbH

Component: SOMATOM Definition AS	**Model / Serial Number:** 8098555 / 6015
UUT Function: Continuous rotating dectector for high-resolution data acquisition	
UUT Description: Component of SOMATOM Definition AS CT System	
Test Location: IABG mbH, Germany	**Test Date:** August 2016

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
4,554	92.9"	36.7"	78.0"	12.3	15.6	>33

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-3	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mounted with 4 - M16 bolts

Manufacturer: Siemens Healthcare GmbH

Component: SOMATOM Definition AS Open	**Model / Serial Number:** 8098555 / 6016
UUT Function: Continuous rotating dectector for high-resolution data acquisition	
UUT Description: Component of SOMATOM Definition AS Open CT System	
Test Location: IABG mbH, Germany	**Test Date:** August 2016

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
4,554	92.9"	36.7"	78.0"	12.0	15.1	>33

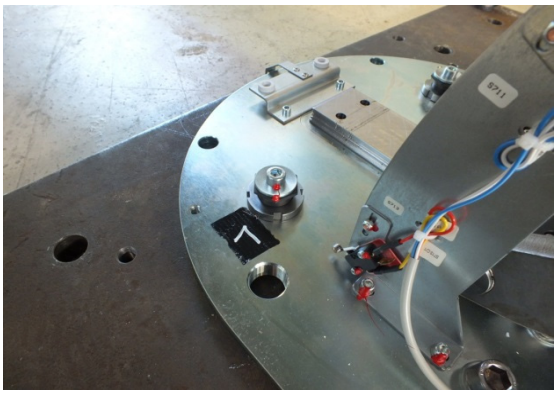
SEISMIC TEST PARAMETERS

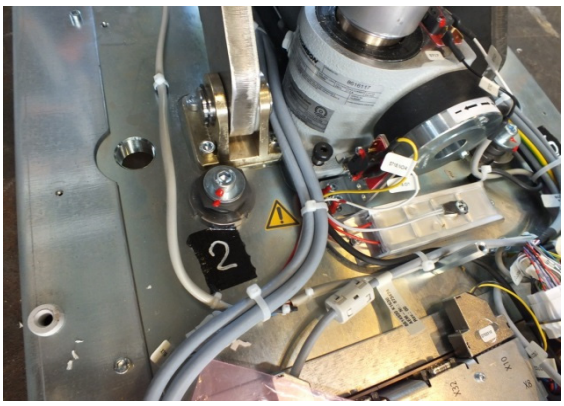
Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-4	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mounted with 4 - M10 bolts





Manufacturer: Siemens Healthcare GmbH

Component: PHS 4 - Patient Table	**Model / Serial Number:** 8097144 / 4481
UUT Function: Motorized table which moves a patient thru the circular opening in the CT system	
UUT Description: Component of SOMATOM Definition Flash, AS, and AS Open CT Systems	
Test Location: IABG mbH, Germany	**Test Date:** August 2016

UUT PROPERTIES

Weight (lb) with Patient	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,241	95.7" - 158.7"	29.5"	18.9" - 36.2"	3.3	13.2	12.2

The patient table moves vertically and horizontally to accommodate different patients and proceedures. The system was tested in the tallest configuration (36.2") with a normal operating horizontal extension of 39.4" (total width = 135.1") and a total simulated patient weight of 308lbs.

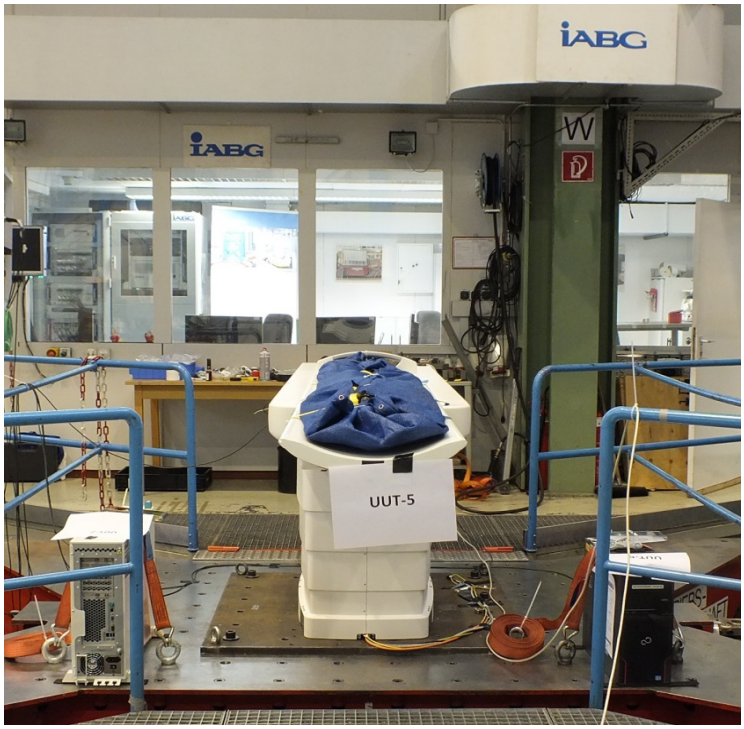
SEISMIC TEST PARAMETERS

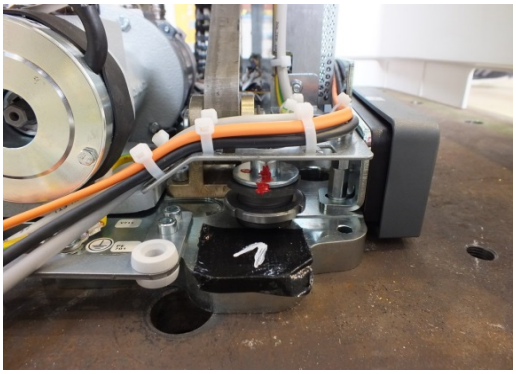
Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

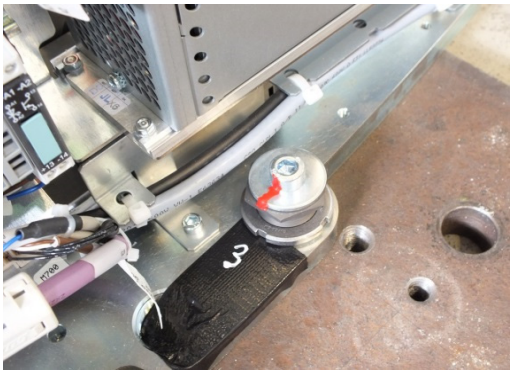
Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-5	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mounted with 4 - M10 bolts







Manufacturer: Siemens Healthcare GmbH

Component: MPT 2 - Patient Table	**Model / Serial Number:** 8097102 / 2197
UUT Function: Motorized table which moves a patient thru the circular opening in the CT system	
UUT Description: Component of SOMATOM Definition Flash, AS, and AS Open CT Systems	
Test Location: IABG mbH, Germany	**Test Date:** August 2016

UUT PROPERTIES

Weight (lb) with Patient	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,619	95.7" - 174.4"	29.5"	21.6" - 36.2"	4.7	22.6	14.6

The patient table moves vertically and horizontally to accommodate different patients and proceedures. The system was tested in the tallest configuration (36.2") with the normal operating horizontal extension of 39.4" (total width = 135.1") and a total simulated patient weight of 308lbs.

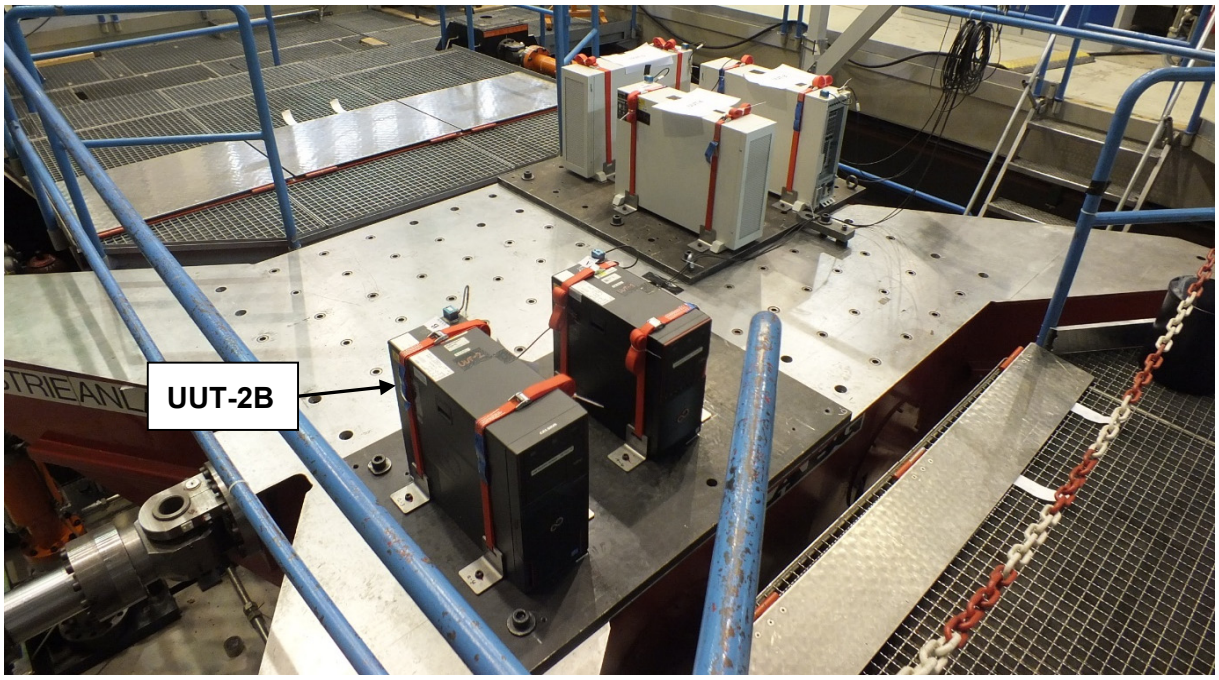
SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-2B	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid Floor mounting using Siemens provided seismic restraint kit SN:10432402. Siesmic restraint kit includes two 1" wide hand tightened cam buckle straps (560lb WLL) looped thru angle brackets positioned on each side of the unit. The four angle brackets are attached to the table with individual M10 bolts.



Manufacturer: Siemens Healthcare GmbH

Component: Celsius M720 Image Control System	**Model / Serial Number:** 10864203 / 3439
UUT Function: Computer for data acquisition, image reconstruction, and processing	
UUT Description: Component of SOMATOM Definition Flash, AS, and AS Open CT Systems	
Test Location: IABG mbH, Germany	**Test Date:** January 2017

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
34	24.4"	9.8"	19.7"	>33	20.3	>33

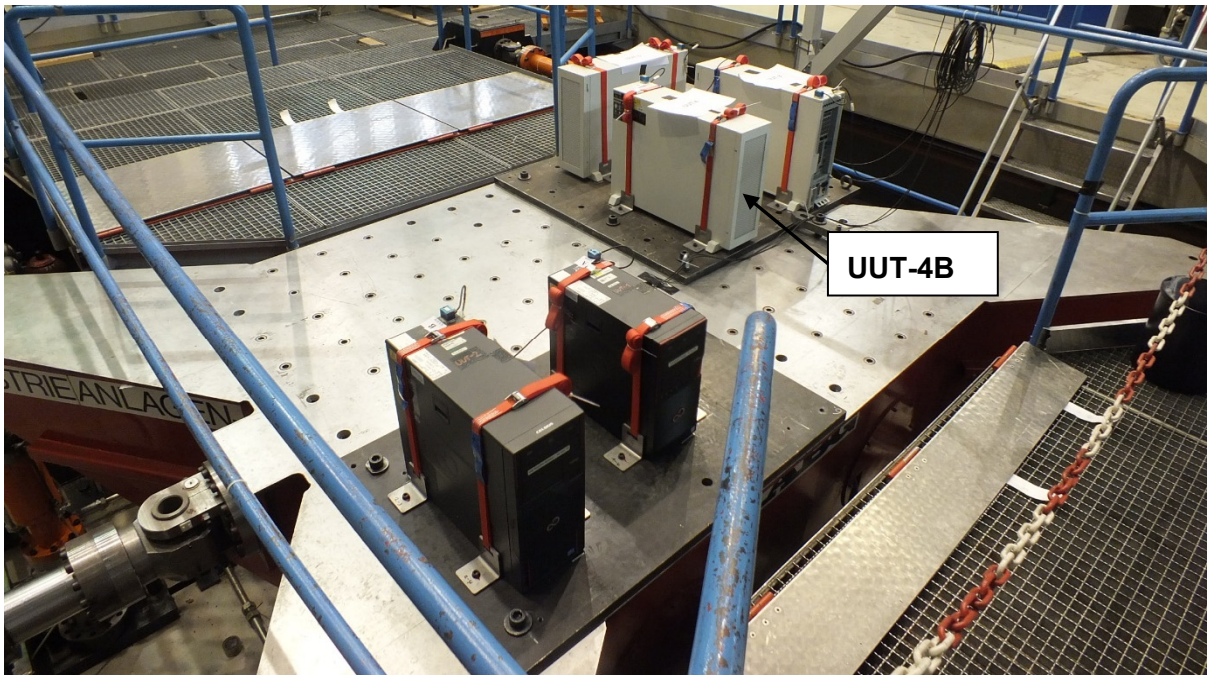
SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-4B	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid Floor mounting using Siemens provided seismic restraint kit SN:10432402. Siesmic restraint kit includes two 1" wide hand tightened cam buckle straps (560lb WLL) looped thru angle brackets positioned on each side of the unit. The four angle brackets are attached to the table with individual M10 bolts.



Manufacturer: Siemens Healthcare GmbH

Component: IRSmx4b Image Reconstruction System	**Model / Serial Number:** 10890634 / LBHN8B0493
UUT Function: Computer for data acquisition, image reconstruction, and processing	
UUT Description: Component of SOMATOM Definition Flash, AS, and AS Open CT Systems	
Test Location: IABG mbH, Germany	**Test Date:** January 2017

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
58	30.3"	10.1"	20.0"	>33	23.6	>33

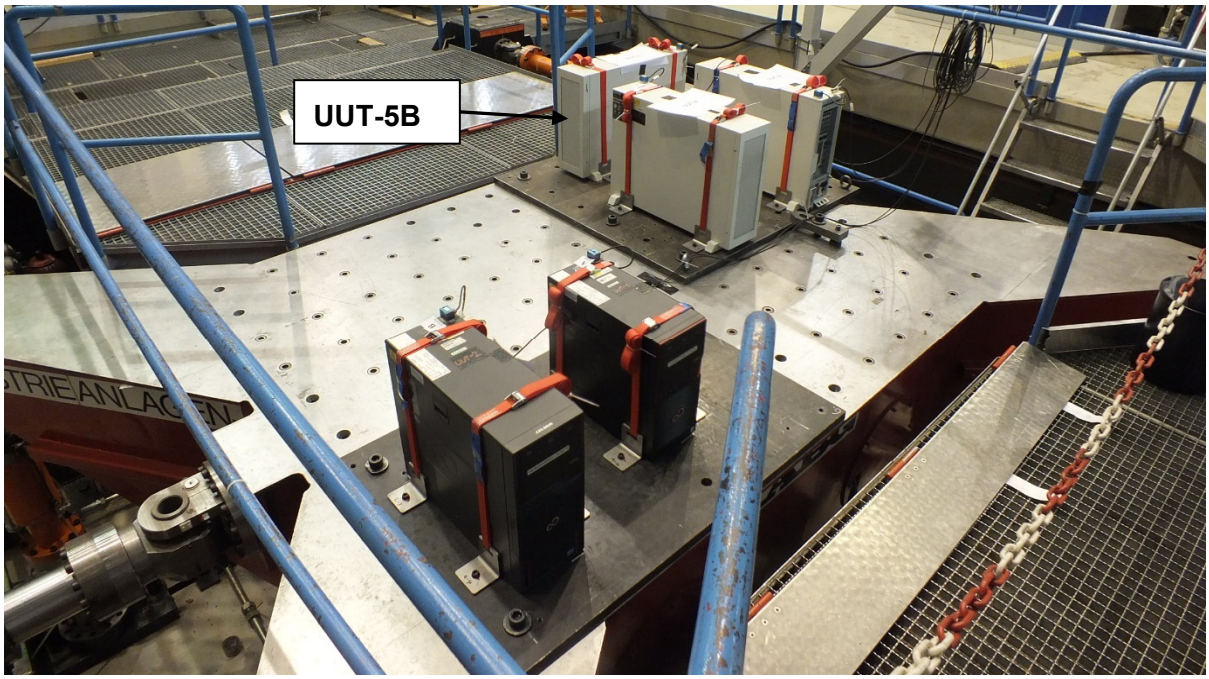
SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-5B	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid Floor mounting using Siemens provided seismic restraint kit SN:10432402. Siesmic restraint kit includes two 1" wide hand tightened cam buckle straps (560lb WLL) looped thru angle brackets positioned on each side of the unit. The four angle brackets are attached to the table with individual M10 bolts.



Manufacturer: Siemens Healthcare GmbH

Component: IRSmx4c Image Reconstruction System	**Model / Serial Number:** 10890635 / LBHD8C0689
UUT Function: Computer for data acquisition, image reconstruction, and processing	
UUT Description: Component of SOMATOM Definition Flash, AS, and AS Open CT Systems	
Test Location: IABG mbH, Germany	**Test Date:** January 2017

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
53	30.3"	10.1"	20.0"	29.5	>33	>33

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.