

GE Signa MR Series

Revision History

Date / Version	Author	Comments
3/16/2012	Steve Moore	Initial release
3/20/2012 A	Steve Moore	Completed entries for <ul style="list-style-type: none"> • Signa EXCITE 1.5T (11.1) DOC0394474 Rev. 1
3/28/2012 B	Steve Moore	Completed entries for <ul style="list-style-type: none"> • Signa EXCITE HD Ovation(12.0) 5124914 Rev. 2 • Signa HDx 3.0T/1.5T (14.0) DOC0225604 Rev. 2 • Signa HDx 3.0T/1.5T (14.0) DOC0099380 Rev. 3

Introduction

Private elements for GE modalities are defined in GE conformance statements found here: http://www.gehealthcare.com/usen/interoperability/dicom/products/ultrasound_dicom.html. The link is for US sites; other regions will find a different link for conformance statements appropriate for those devices.

The GE Signa MR series has a number of different software versions and product names that have been released. We have reviewed conformance statements that correspond to software releases encountered when accepting images for the Cancer Imaging Archive (<http://www.cancerimagingarchive.net>). This document describes the private elements are listed in these conformance statements.

Observations on GE Private Elements

After reading several conformance statements for different software releases in the Signa series, a clear pattern emerged. We did not confirm this with GE.

1. The Signa MR scanners use private elements in these groups with these private creator values:

- a. 0009 GEMS_IDEN_01
- b. 0011 GEMS_PATI_01
- c. 0019 GEMS_ACQU_01
- d. 0021 GEMS_RELA_01
- e. 0023 GEMS_STDY_01
- f. 0025 GEMS_SERS_01
- g. 0027 GEMS_IMAG_01
- h. 0029 GEMS_IMPS_01

- i. 0043 GEMS_PARM_01
 - j. 2001 BrainWave: 1.2.840.113819.3
 - k. 7001 GEMS_MR_RAW_01
 - l. 0051 GEMS_FUNCTOOL_01
2. From the GE website, we start with “Signa EXCITE 3T/1.5T (11.0) 2388702DRS Rev. 0”
 3. The software versions that follow this version use the same structure. The private groups and private creator values are the same. The newer software versions use the same private elements with these changes:
 - a. A new software version may define and document a private element that was not defined in a previous software version.
 - b. A new software version may re-use an existing private element but give it a name which better defines the intention/interpretation of the element.
 - c. One software version (or several in succession) may define a private element as either a placeholder or with the term “user data”. This does not tell the reader what to expect in that element. A later software release will properly define the element.

The interpretation of this is that it seems to be safe to use one set of definitions in our implementation of software that catalogs private elements from GE Signa modalities. Earlier software versions will not contain private elements that are first used in later software version and will not cause issues when de-identifying private elements. If there are any questions about the content of a private element as defined in a conformance statement, we can configure our software to review the element value before deciding to include or exclude the element.

False Start

We had started this analysis with the belief that each DICOM header would contain enough data to identify the modality model and software version. That would allow software to automatically determine exactly which conformance statement was appropriate and to use the exact profiles for that software version. We have since found that images from some sites do not contain the software version and/or model number. Some images are even lacking the manufacturer name. Whether this is intentional by a site to further obscure the data or just the configuration of the scanner, the net result is the same. We use the private creator data defined in the GE conformance statements as the basis for analyzing the private elements.

Scanner/Software Versions

Link Name / GE website	Model	Software Version	Document
Signa EXCITE 3T/1.5T (11.0) 2388702DRS Rev. 0	Signa Excite	11.0	2388702DRS Rev. 0
Signa EXCITE 1.5T (11.1)	Signa Excite	11.1	DOC0394474 Rev. 1

DOC0394474 Rev. 1			
Signa EXCITE HD Ovation(12.0) 5124914 Rev. 2	Signa Excite HD Ovation	12.0	5124914 Rev. 2
Signa HDx 3.0T/1.5T (14.0) DOC0225604 Rev. 2	Signa HDx	14.0	DOC0225604 Rev. 2
Signa HDx 3.0T/1.5T (14.0) DOC0099380 Rev. 3	Signa HDx	14.0	DOC0099380 Rev. 3

GEMS_IDEN_01

In the table of private elements in this section and following:

*: Element is listed in the document

X1: Element is listed with a note: No longer supported

				EXCITE 3T/1.5T (11.0)	EXCITE 1.5T (11.1)	Signa EXCITE HD Ovation(12.0)	Signa HDx 3.0T/1.5T (14.0)	Signa HDx 3.0T/1.5T (14.0) DOC0099380 Rev. 3
Description	Tag	VR	VM					
GEHC Private Creator ID	0x00090010	LO	1	*	*	*	*	*
Full fidelity	0x00091001	LO	1	X 1	X 1	X 1	X 1	X 1
Suite id	0x00091002	SH	1	*	*	*	*	*
Product ID	0x00091004	SH	1	*	*	*	*	*
Image Actual Date	0x00091027	SL	1	*	*	*	*	*
Service id	0x00091030	SH	1	*	*	*	*	*
Mobile location number	0x00091031	SH	1	*	*	*	*	*
Equipment UID	0x000910e3	UI	1	*	*	*	*	*
Genesis Version - now	0x000910e6	SH	1	X 1	X 1	X 1	X 1	X 1
Exam Record Checksum	0x000910e7	UL	1	X 1	X 1	X 1	X 1	X 1
Actual series data time stamp	0x000910e9	SL	1	*	*	*	*	*

GEMS_PATI_01

					EXCITE 3T/1.5T (11.0)	EXCITE 1.5T (11.1)	Signa EXCITE HD Ovation(12.0)	Signa HDx 3.0T/1.5T (14.0)	Signa HDx 3.0T/1.5T (14.0) DOC0099380 Rev. 3
GEHC Private Creator ID	0x00110010	LO	1	*	*	*	*	*	
Patient Status	0x00111010	SS	1	*	*	*	*	*	

GEMS_ACQU_01

					EXCITE 3T/1.5T (11.0)	EXCITE 1.5T (11.1)	Signa EXCITE HD Ovation(12.0)	Signa HDx 3.0T/1.5T (14.0)	Signa HDx 3.0T/1.5T (14.0) DOC0099380 Rev. 3
GEHC Private Creator ID	0x00190010	LO	1	*	*	*	*	*	
Horiz. Frame of ref.	0x0019100f	DS	1	*	*	*	*	*	
Series Contrast	0x00191011	SS	1	*	*	*	*	*	
Last pseq	0x00191012	SS	1	*	X 1	*	X 1	X 1	
Series plane	0x00191017	SS	1	*	X 1	*	X 1	X 1	
First scan ras	0x00191018	LO	1	*	X 1	X 1	X 1	X 1	
First scan location	0x00191019	DS	1	*	X 1	X 1	X 1	X 1	

Last scan ras	0x0019101a	LO	1	*	X 1	X 1	X 1	X 1
Last scan loc	0x0019101b	DS	1	*	X 1	X 1	X 1	X 1
Display field of view	0x0019101e	DS	1	*	*	*	*	*
Acquisition Duration	0x0019105a	FL	1	*	*	*	*	*
Second echo	0x0019107d	DS	1	*	*	*	*	*
Number of echoes	0x0019107e	SS	1	*	*	*	*	*
Table delta	0x0019107f	DS	1	*	*	*	*	*
Contiguous	0x00191081	SS	1	*	*	*	*	*
Peak SAR	0x00191084	DS	1	*	X 1	*	X 1	X 1
Monitor SAR	0x00191085	SS	1	*	X 1	X 1	X 1	X 1
Cardiac repetition time	0x00191087	DS	1	*	*	*	*	*
Images per cardiac cycle	0x00191088	SS	1	*	*	*	*	*
Actual receive gain analog	0x0019108a	SS	1	*	*	*	*	*
Actual receive gain digital	0x0019108b	SS	1	*	*	*	*	*
Delay after trigger	0x0019108d	DS	1	*	*	*	*	*
Swappf	0x0019108f	SS	1	*	*	*	*	*
Pause Interval	0x00191090	SS	1	*	*	*	*	*
Pause Time	0x00191091	DS	1	*	*	*	*	*
Slice offset on freq axis	0x00191092	SL	1	*	*	*	*	*
(L1) Center Frequency (L2) Auto Prescan Center Frequency	0x00191093	DS	1	(L1)	(L2)	(L2)	(L2)	(L2)
(L1) Transmit Gain (L2) Auto Prescan Transmit Gain	0x00191094	SS	1	(L1)	(L2)	(L2)	(L2)	(L2)
(L1) Analog receiver gain (L2) Auto Prescan Analog receiver gain	0x00191095	SS	1	(L1)	(L2)	(L2)	(L2)	(L2)
(L1) Digital receiver gain (L2) Auto Prescan Digital receiver gain	0x00191096	SS	1	(L1)	(L2)	(L2)	(L2)	(L2)
Bitmap defining CVs	0x00191097	SL	1	*	*	*	*	*
Center freq. Method	0x00191098	SS	1	*	*	*	*	*
Pulse Sequence Mode	0x0019109b	SS	1	*	*	*	*	*
Pulse Sequence Name	0x0019109c	LO	1	*	*	*	*	*
Pulse Sequence Date	0x0019109d	DT	1	*	*	*	*	*
Internal Pulse Sequence Name	0x0019109e	LO	1	*	*	*	*	*
Transmitting Coil Type	0x0019109f	SS	1	*	*	*	*	*
Surface Coil Type	0x001910a0	SS	1	*	*	*	*	*
Extremity Coil flag	0x001910a1	SS	1	*	*	*	*	*
Raw data run number	0x001910a2	SL	1	*	*	*	*	*
Calibrated Field Strength	0x001910a3	UL	1	*	*	*	*	*
SAT fat/water/bone	0x001910a4	SS	1	*	*	*	*	*

Receive bandwidth	0x001910a5	DS	1	X 1	X 1	X 1	X 1	X 1
User data 0	0x001910a7	DS	1	*	*	*	*	*
User data 1	0x001910a8	DS	1	*	*	*	*	*
User data 2	0x001910a9	DS	1	*	*	*	*	*
User data 3	0x001910aa	DS	1	*	*	*	*	*
User data 4	0x001910ab	DS	1	*	*	*	*	*
User data 5	0x001910ac	DS	1	*	*	*	*	*
user data 6	0x001910ad	DS	1	*	*	*	*	*
User data 7	0x001910ae	DS	1	*	*	*	*	*
User data 8	0x001910af	DS	1	*	*	*	*	*
User data 9	0x001910b0	DS	1	*	*	*	*	*
User data 10	0x001910b1	DS	1	*	*	*	*	*
User data 11	0x001910b2	DS	1	*	*	*	*	*
User data 12	0x001910b3	DS	1	*	*	*	*	*
User data 13	0x001910b4	DS	1	*	*	*	*	*
User data 14	0x001910b5	DS	1	*	*	*	*	*
User data 15	0x001910b6	DS	1	*	*	*	*	*
User data 16	0x001910b7	DS	1	*	*	*	*	*
User data 17	0x001910b8	DS	1	*	*	*	*	*
User data 18	0x001910b9	DS	1	*	*	*	*	*
User data 19	0x001910ba	DS	1	*	*	*	*	*
User data 20	0x001910bb	DS	1	*	*	*	*	*
User data 21	0x001910bc	DS	1	*	*	*	*	*
User data 22	0x001910bd	DS	1	*	*	*	*	*
Projection angle	0x001910be	DS	1	*	*	*	*	*
Saturation planes	0x001910c0	SS	1	*	*	*	*	*
Surface coil intensity	0x001910c1	SS	1	X 1	X 1	X 1	X 1	X 1
SAT location R	0x001910c2	SS	1	*	*	*	*	*
SAT location L	0x001910c3	SS	1	*	*	*	*	*
SAT location A	0x001910c4	SS	1	*	*	*	*	*
SAT location P	0x001910c5	SS	1	*	*	*	*	*
SAT location H	0x001910c6	SS	1	*	*	*	*	*
SAT location F	0x001910c7	SS	1	*	*	*	*	*
SAT thickness R/L	0x001910c8	SS	1	*	*	*	*	*
SAT thickness A/P	0x001910c9	SS	1	*	*	*	*	*
SAT thickness H/F	0x001910ca	SS	1	*	*	*	*	*
(L1) Prescribed flow axis (L2) Phase Contrast flow axis	0x001910cb	SS	1	(L1)	(L2)	(L2)	(L2)	(L2)
Velocity encoding	0x001910cc	SS	1	*	*	*	*	*
Thickness disclaimer	0x001910cd	SS	1	*	*	*	*	*
Prescan type	0x001910ce	SS	1	*	*	*	*	*
Prescan status	0x001910cf	SS	1	*	*	*	*	*

Raw data type	0x001910d0	SH	1	*	*	*	*	*
Projection Algorithm	0x001910d2	SS	1	X 1	*	*	*	*
(L1) Projection algorithm (L2) Projection Algorithm Name	0x001910d3	SH	1	(L1)	(L2)	(L2)	(L2)	(L2)
Fractional echo	0x001910d5	SS	1	*	*	*	*	*
Prep pulse	0x001910d6	SS	1	*	X 1	X 1	X 1	X 1
Cardiac phase number	0x001910d7	SS	1	*	*	*	*	*
Variable echoflag	0x001910d8	SS	1	*	*	*	*	*
(L1) Concatenated SAT (L2) Concatenated SAT {# DTI Diffusion Dir., release 9.0 & below}	0x001910d9	DS	1	(L1)	(L2)	(L2)	(L2)	(L2)
(L1) User data 23 (L2) User data 23 {#DTI Diffusion Dir., release 9.0 & below}	0x001910df	DS	1	(L1)	(L2)	(L2)	(L2)	(L2)
(L1) User data 24 (L2) User data 24 {# DTI Diffusion Dir., release 10.0 & above}	0x001910e0	DS	1	(L1)	(L2)	(L2)	(L2)	(L2)
Velocity Encode Scale	0x001910e2	DS	1	*	*	*	*	*
Fast phases	0x001910f2	SS	1	*	*	*	*	*
Transmit gain	0x001910f9	DS	1	*	*	*	*	*

GEMS_REL A_01

GEHC Private Creator ID	0x00210010	LO	1	*	*	*	*	*

EXCITE 3T/1.5T (11.0)

EXCITE 1.5T (11.1)

Signa EXCITE HD Ovation(12.0)

Signa HDx 3.0T/1.5T (14.0)

Signa HDx 3.0T/1.5T (14.0) DOC0099380
Rev. 3

Series from which Prescribed	0x00211003	SS	1	X 1	X 1	X 1	X 1	X 1
Genesis Version - now	0x00211005	SH	1	X 1	X 1	X 1	X 1	X 1
Series Record checksum	0x00211007	UL	1	X 1	X 1	X 1	X 1	X 1
Genesis version - Now	0x00211018	SH	1	X 1	X 1	X 1	X 1	X 1
Acq recon record checksum	0x00211019	UL	1	X 1	X 1	X 1	X 1	X 1
Table start location	0x00211020	DS	1	X 1	X 1	X 1	X 1	X 1
Series from which prescribed	0x00211035	SS	1	*	*	*	*	*
Image from which prescribed	0x00211036	SS	1	*	*	*	*	*
Screen Format	0x00211037	SS	1	*	*	*	*	*
Locations in acquisition	0x0021104f	SS	1	*	*	*	*	*
Graphically prescribed	0x00211050	SS	1	*	*	*	*	*
Rotation from source x rot	0x00211051	DS	1	*	*	*	*	*
Rotation from source y rot	0x00211052	DS	1	*	*	*	*	*
Rotation from source z rot	0x00211053	DS	1	*	*	*	*	*
Image position	0x00211054	SH	3	X 1	X 1	X 1	X 1	X 1
Image orientation	0x00211055	SH	6	X 1	X 1	X 1	X 1	X 1
Num 3D slabs	0x00211056	SL	1	*	*	*	*	*
Locs per 3D slab	0x00211057	SL	1	*	*	*	*	*
Overlaps	0x00211058	SL	1	*	*	*	*	*
(L1) Image Filtering (L2) Image Filtering 0.5/0.2T	0x00211059	SL	1	(L1)	(L2)	(L2)	(L2)	(L2)
Diffusion direction	0x0021105a	SL	1	*	*	*	*	*
(L1) lhtagfa (L2) Tagging Flip Angle	0x0021105b	DS	1	(L1)	(L2)	(L1)	(L2)	(L2)
(L1) lhtagor (L2) Tagging Orientation	0x0021105c	DS	1	(L1)	(L2)	(L1)	(L2)	(L2)
(L1) lhbspti (L2) Tag Spacing	0x0021105d	DS	1	(L1)	(L2)	(L1)	(L2)	(L2)
RTIA_timer	0x0021105e	DS	1	*	*	*	*	*
Fps	0x0021105f	DS	1	*	*	*	*	*
Auto window/level alpha	0x00211081	DS	1	*	X 1	*	X 1	X 1
Auto window/level beta	0x00211082	DS	1	*	X 1	*	X 1	X 1
Auto window/level window	0x00211083	DS	1	*	*	*	*	*
Auto window/level level	0x00211084	DS	1	*	*	*	*	*

GEMS_STDY_01

				EXCITE 3T/1.5T (11.0)	EXCITE 1.5T (11.1)	Signa EXCITE HD Ovation(12.0)	Signa HDx 3.0T/1.5T (14.0)	Signa HDx 3.0T/1.5T (14.0) DOC0099380 Rev. 3
GEHC Private Creator ID	0x00230010	LO	1	*	X 1	*	X 1	X 1
Number of series in Study	0x00231001	SL	1	X 1	X 1	X 1	X 1	X 1
Number of unarchived Series	0x00231002	SL	1	X 1	X 1	X 1	X 1	X 1
Reference image field	0x00231010	SS	1	*	X 1	*	X 1	X 1
Summary image	0x00231050	SS	1	*	X 1	*	X 1	X 1
Start time(secs) in first axial	0x00231070	FD	1	*	X 1	*	X 1	X 1
No. of updates to header	0x00231074	SL	1	*	X 1	*	X 1	X 1
Indicates study has complete info (DICOM/genesis)	0x0023107d	SS	1	*	X 1	*	X 1	X 1

GEMS_SERS_01

				EXCITE 3T/1.5T (11.0)	EXCITE 1.5T (11.1)	Signa EXCITE HD Ovation(12.0)	Signa HDx 3.0T/1.5T (14.0)	Signa HDx 3.0T/1.5T (14.0) DOC0099380 Rev.3
GEHC Private Creator ID	0x00250010	LO	1	*	*	*	*	*
Last pulse sequence used	0x00251006	SS	1	*	X 1	*	X 1	X 1
Images in Series	0x00251007	SL	1	*	*	*	*	*
Landmark Counter	0x00251010	SL	1	*	*	*	*	*
Number of Acquisitions	0x00251011	SS	1	*	*	*	*	*
Indicates no. of updates to header	0x00251014	SL	1	*	X 1	*	X 1	X 1
Series Complete Flag	0x00251017	SL	1	*	X 1	*	X 1	X 1
Number of images archived	0x00251018	SL	1	*	X 1	*	X 1	X 1
Last image number used	0x00251019	SL	1	*	*	*	*	*
Primary Receiver Suite and Host	0x0025101a	SH	1	*	*	*	*	*
Protocol Data Block (compressed)	0x0025101b	OB	1	*	*	*	*	*

GEMS_IMAG_01

				EXCITE 3T/1.5T (11.0)	EXCITE 1.5T (11.1)	Signa EXCITE HD Ovation(12.0)	Signa HDx 3.0T/1.5T (14.0)	Signa HDx 3.0T/1.5T (14.0) DOC0099380 Rev.3
GEHC Private Creator ID	0x00270010	LO	1	*	*	*	*	*
Image archive flag	0x00271006	SL	1	*	X 1	*	X 1	X 1
Scout Type	0x00271010	SS	1	*	X 1	*	X 1	X 1
Foreign Image Revision	0x00271030	SH	1	*	X 1	*	X 1	X 1
Imaging Mode	0x00271031	SS	1	*	*	*	*	*
Pulse Sequence	0x00271032	SS	1	*	*	*	*	*
Imaging Options	0x00271033	SL	1	*	*	*	*	*
Plane Type	0x00271035	SS	1	*	*	*	*	*
Oblique Plane	0x00271036	SL	1	X 1	X 1	X 1	X 1	X 1
RAS letter of image location	0x00271040	SH	1	X 1	*	*	*	*
Image location	0x00271041	FL	1	X 1	*	*	*	*
Center R coord of plane image	0x00271042	FL	1	X 1	X 1	X 1	X 1	X 1
Center A coord of plane image	0x00271043	FL	1	X 1	X 1	X 1	X 1	X 1
Center S coord of plane image	0x00271044	FL	1	X 1	X 1	X 1	X 1	X 1
Normal R coord	0x00271045	FL	1	X 1	X 1	X 1	X 1	X 1
Normal A coord	0x00271046	FL	1	X 1	X 1	X 1	X 1	X 1
Normal S coord	0x00271047	FL	1	X 1	X 1	X 1	X 1	X 1
R Coord of Top Right Corner	0x00271048	FL	1	X 1	X 1	X 1	X 1	X 1
A Coord of Top Right Corner	0x00271049	FL	1	X 1	X 1	X 1	X 1	X 1
S Coord of Top Right Corner	0x0027104a	FL	1	X 1	X 1	X 1	X 1	X 1
R Coord of Bottom Right Corner	0x0027104b	FL	1	X 1	X 1	X 1	X 1	X 1
A Coord of Bottom Right Corner	0x0027104c	FL	1	X 1	X 1	X 1	X 1	X 1
S Coord of Bottom Right Corner	0x0027104d	FL	1	X 1	X 1	X 1	X 1	X 1
Image dimension - X	0x00271060	FL	1	*	*	*	*	*
Image dimension - Y	0x00271061	FL	1	*	*	*	*	*
Number of Excitations	0x00271062	FL	1	*	*	*	*	*

GEMS_IMPS_01

				EXCITE 3T/1.5T (11.0)	EXCITE 1.5T (11.1)	Signa EXCITE HD Ovation(12.0)	Signa HDx 3.0T/1.5T (14.0)	Signa HDx 3.0T/1.5T (14.0) DOC0099380 Rev. 3
GEHC Private Creator ID	0x00290010	LO	1	*	*	*	*	*
Lower range of Pixels1	0x00291015	SL	1	*	*	*	*	*
(L1) Lower range of Pixels1 (L2) Upper range of Pixels 1	0x00291016	SL	1	(L1)	(L2)	(L1)	(L2)	(L2)
Lower range of Pixels2	0x00291017	SL	1	*	X 1	*	X 1	X 1
Upper range of Pixels2	0x00291018	SL	1	*	X 1	*	X 1	X 1
Len of tot hdr in bytes	0x0029101a	SL	1	X 1	X 1	X 1	X 1	X 1
Version of the hdr struct	0x00291026	SS	1	*	X 1	*	X 1	X 1
Advantage comp. Overflow	0x00291034	SL	1	*	X 1	*	X 1	X 1
Advantage comp. Underflow	0x00291035	SL	1	*	X 1	*	X 1	X 1

Note: (L1) Lower range of Pixels1 for 0x00291016 seems to be a typo.

GEMS_PARM_01

				EXCITE 3T/1.5T (11.0)	EXCITE 1.5T (11.1)	Signa EXCITE HD Ovation(12.0)	Signa HDx 3.0T/1.5T (14.0)	Signa HDx 3.0T/1.5T (14.0) DOC0099380 Rev. 3
GEHC Private Creator ID	0x00430010	LO	1	*	*	*	*	*
Bitmap of prescan options	0x00431001	SS	1	*	*	*	*	*
Gradient offset in X	0x00431002	SS	1	*	*	*	*	*
Gradient offset in Y	0x00431003	SS	1	*	*	*	*	*
Gradient offset in Z	0x00431004	SS	1	*	*	*	*	*
Img is original or unoriginal	0x00431005	SS	1	X 1	X 1	X 1	X 1	X 1
Number of EPI shots	0x00431006	SS	1	*	*	*	*	*
Views per segment	0x00431007	SS	1	*	*	*	*	*
Respiratory rate, bpm	0x00431008	SS	1	*	*	*	*	*
Respiratory trigger point	0x00431009	SS	1	*	*	*	*	*
Type of receiver used	0x0043100a	SS	1	*	*	*	*	*
(L1) Peak rate of change of gradient field (L2) DB/dt Peak rate of change of gradient field	0x0043100b	DS	1	(L1)	(L2)	(L2)	(L2)	(L2)
(L1) Limits in units of percent (L2) dB/dt Limits in units of percent	0x0043100c	DS	1	(L1)	(L2)	(L2)	(L2)	(L2)
PSD estimated limit	0x0043100d	DS	1	*	*	*	*	*
PSD estimated limit in tesla per second	0x0043100e	DS	1	*	*	*	*	*
Saravghead	0x0043100f	DS	1	*	X 1	X 1	X 1	X 1
Window value	0x00431010	US	1	*	X 1	X 1	X 1	X 1
GE image integrity	0x0043101c	SS	1	*	*	*	*	*
Level value	0x0043101d	SS	1	*	X 1	X 1	X 1	X 1
Unique image iden	0x00431028	OB	1	*	X 1	*	X 1	X 1
Histogram tables	0x00431029	OB	1	*	*	*	*	*
User defined data	0x0043102a	OB	1	*	*	*	*	*
Private Scan Options	0x0043102b	SS	4	X 1	X 1	X 1	X 1	X 1
Effective echo spacing	0x0043102c	SS	1	*	*	*	*	*

Filter Mode (String slop field 1 in legacy GE MR images)	0x0043102d	SH	1	*	*	*	*	*
String slop field 2	0x0043102e	SH	1	*	*	*	*	*
Image Type (real, imaginary, phase, magnitude)	0x0043102f	SS	1	*	*	*	*	*
Vas collapse flag	0x00431030	SS	1	*	*	*	*	*
RA cord of target recon center	0x00431031	DS	2	*	X 1	X 1	X 1	X 1
Vas flags	0x00431032	SS	1	*	*	*	*	*
Neg_scanspacing	0x00431033	FL	1	*	*	*	*	*
Offset Frequency	0x00431034	IS	1	*	*	*	*	*
User_usage_tag	0x00431035	UL	1	*	*	*	*	*
User_fill_map_MSW	0x00431036	UL	1	*	*	*	*	*
User_fill_map_LSW	0x00431037	UL	1	*	*	*	*	*
(L1) User data 25...User data 48 (L2) User data 25...User data 48 {User48=Effective Resolution for spiral}	0x00431038	FL	24	(L1)	(L2)	(L2)	(L2)	(L2)
slop_int_6... slop_int_9 6: b_value 7: private imaging options 2 8: ihtagging 9: ihtagspc	0x00431039	IS	4	*	*	*	*	*
(L1) Slop_int_10... slop_int_17 10: ihfcineim 11: ihfcinent 12: Reserved 13: optarr 14: averages 15: Current Station # 16: Total # of Stations 17: Reserved (L2) Slop_int_10... slop_int_17 10: ihfcineim 11: ihfcinent 12: Reserved 13: optarr 14: averages 15: Current Station # 16: Total # of Stations 17: private imaging options 3	0x00431060	IS	8	(L1)	(L2)	(L2)	(L2)	(L2)
Scanner Study Entity UID	0x00431061	UI	1	*	X 1	*	X 1	X 1
Scanner Study ID	0x00431062	SH	1	*	X 1	*	X 1	X 1

(L1) Scanner Table Entry (single gradient coil systems only) Scanner Table Entry + Gradient Coil Selected				(L1)	(L2)	(L2)	(L2)	(L2)
(L2) Scanner Table Entry (single gradient coil systems only); Scanner table Entry + Gradient Coil Selected 1: table entry, 2: table swing angle, 3: table lateral offset, 4: gradient coil selected (multiple gradient systems only)	0x0043106f	DS	3,4					
Paradigm Name	0x00431070	LO	1	*	*	*	*	*
Paradigm Description	0x00431071	ST	1	*	*	*	*	*
Paradigm UID	0x00431072	UI	1	*	*	*	*	*
Experiment Type	0x00431073	US	1	*	*	*	*	*
#rest volumes	0x00431074	US	1	*	*	*	*	*
#active volumes	0x00431075	US	1	*	*	*	*	*
#dummy scans	0x00431076	US	1	*	*	*	*	*
Application Name	0x00431077	SH	1	*	*	*	*	*
Application Version	0x00431078	SH	1	*	*	*	*	*
Slices Per Volume	0x00431079	US	1	*	*	*	*	*
Expected Time Points	0x0043107a	US	1	*	*	*	*	*
Regressor Values	0x0043107b	FL	1-n	*	*	*	*	*
Delay after slice group	0x0043107c	FL	1	*	*	*	*	*
Recon mode flag word	0x0043107d	US	1	*	*	*	*	*
PACC specific information	0x0043107e	LO	1-n	*	*	*	*	*
(L1) Grad Shim Values (L2) Reserved	0x0043107f	DS	1-n	(L1)	(L2)	(L2)	(L2)	(L2)
Coil ID Data	0x00431080	LO	1-n		*	*	*	*
GE Coil Name	0x00431081	LO	1		*	*	*	*
System Configuration Information	0x00431082	LO	1-n		*	*	*	*
Asset R Factors	0x00431083	DS	1-2		*	*	*	*
Additional Asset Data	0x00431084	LO	5		*	*	*	*
Debug Data (text format)	0x00431085	UT	1		*	*	*	*
Debug Data (binary format)	0x00431086	OB	1		*	*	*	*
(L1) Reserved (L2) Software Versions Long	0x00431087	UT	1		(L1)	(L2)	(L1)	(L1)
PURE Acquisition Calibration Series UID	0x00431088	UI	1		*	*	*	*
Governing Body, dB/dt, and SAR definition	0x00431089	LO	3		*	*	*	*

Private In-Plane Phase Encoding Direction	0x0043108a	CS	1		*	*	*	*
FMRI Binary Data Block	0x0043108b	OB	1		*		*	*
Voxel Location	0x0043108c	DS	6		*		*	*
SAT Band Locations	0x0043108d	DS	7n		*		*	*
Spectro Prescan Values	0x0043108e	DS	3		*		*	*
Spectro Parameters	0x0043018f	DS	3		*		*	*
SAR Definition	0x00431090	LO	1-n		*	*	*	*
SAR value	0x00431091	DS	1-n		*	*	*	*
Image Error Text	0x00431092	LO	1		*	*	*	*
Spectro Quantitation Values	0x00431093	DS	1-n		*		*	*
Spectro Ratio Values	0x00431094	DS	1-n		*		*	*
Prescan Reuse String	0x00431095	LO	1		*		*	*
Content Qualification	0x00431096	CS	1		*	*	*	*
Image Filtering Parameters	0x00431097	LO	8		*	*	*	*
ASSET Acquisition Calibration Series UID	0x00431098	UI	1		*	*	*	*
Extended Options	0x00431099	LO	1-n		*	*	*	*
Rx Stack Identification	0x0043109a	IS	1		*		*	*

BrainWave: 1.2.840.113819.3

					EXCITE 3T/1.5T (11.0)	EXCITE 1.5T (11.1)	Signa EXCITE HD Ovation(12.0)	Signa HDx 3.0T/1.5T (14.0)	Signa HDx 3.0T/1.5T (14.0) DOC0099380 Rev. 3
Private Creator ID	0x20010010	LO	1	*	*	*	*	*	
DICOM Implementation UID	0x20011010	UI	1	*	*	*	*	*	
DICOM Implementation Version	0x10011011	SH	1	*	*	*	*	*	
Within-DICOM-Implementation	0x20011012	UI	1	*	*	*	*	*	

SOP Instance UID								
Application Name	0x20011013	SH	1	*	*	*	*	*
Application Version	0x20011014	SH	1	*	*	*	*	*
Compatibility Version	0x20011015	SH	1		*		*	*
Referenced Series UID	0x20011021	UI	1-n	*	*	*	*	*
Number of Objects Averaged	0x20011031	US	1	*	*	*	*	*
Number of Expected Time Points	0x20011041	US	1					
Number of Slices Per Volume	0x20011051	US	1	*	*	*	*	*
BW Image Type	0x20011060	US	1		*		*	*
Experiment Type	0x20011061	US	1	*	*	*	*	*
Paradigm UID	0x20011071	UI	1	*	*	*	*	*
Paradigm Name	0x20011072	LO	1	*	*	*	*	*
Paradigm Description	0x20011073	ST	1	*	*	*	*	*
Contrast	0x20011080	OB	1		*		*	*
Regressor Values	0x20011081	FL	1-n	*	*	*	*	*
Number of Degrees of Freedom	0x20011086	US	1	*	*	*	*	*
Z Threshold	0x2001108a	FL	1	*	*	*	*	*
p Threshold	0x2001108b	FL	1	*	*	*	*	*
Motion Parameters	0x200110a0	FL	1-n		*		*	*
Registration Parameters	0x200110a1	FL	1-n		*		*	*
Subject Data	0x200110a2	FL	1-n		*		*	*
DTI Parameters	0x200110b0	OB	1		*		*	*
Paradigm Info	0x200110c0	OB	1		*		*	*

GEMS_MR_RAW_01

				EXCITE 3T/1.5T (11.0)	EXCITE 1.5T (11.1)	Signa EXCITE HD Ovation(12.0)	Signa HDx 3.0T/1.5T (14.0)	Signa HDx 3.0T/1.5T (14.0) DOC0092380 Rev. 3
GEHC Private Creator ID	0x70010010	LO	1	*	*	*	*	*
rdb_hdr_rec	0x70011001	OB	1	*	*	*	*	*
rdb_hdr_per_pass_tab	0x70011002	OB	1	*	*	*	*	*
rdr_hdr_unlock_raw	0x70011003	OB	1	*	*	*	*	*
rdb_hdr_data_acq_tab	0x70011004	OB	1	*	*	*	*	*
rdb_hdr_nex_tab	0x70011005	OB	1	*	*	*	*	*
rdb_hdr_nex_abort_tab	0x70011006	OB	1	*	*	*	*	*
rdb_hdr_tool	0x70011007	OB	1	*	*	*	*	*
rdb_raw_data	0x70011008	OB	1	*	*	*	*	*
SSP save	0x70011009	OB	1	*	*	*	*	*
UDA save	0x7001100a	OB	1	*	*	*	*	*
rdb_chemsat_data	0x7001100b	OB	1		*		*	*

GEMS_FUNCTOOL_01

				EXCITE 3T/1.5T (11.0)	EXCITE 1.5T (11.1)	Signa EXCITE HD Ovation(12.0)	Signa HDx 3.0T/1.5T (14.0)	Signa HDx 3.0T/1.5T (14.0) DOC0099380 Rev.3
GEHC Private Creator ID	0x005110010	LO	1		*	*	*	*
Functional Proc Group Name	0x00511001	LO	1		*	*	*	*
Functional Processing Name	0x00511002	LO	1		*	*	*	*
Bias of Functional Image	0x00511003	SL	1		*	*	*	*
Scale of Functional Image	0x00511004	FL	1		*	*	*	*
Length of Parameters String	0x00511005	SL	1		*	*	*	*
Store Parameters string, delimited by character ESC=0x1b (27)	0x00511006	LT	1		*	*	*	*
Functional Image Version	0x00511007	LO	1		*	*	*	*
Store Color Ramp	0x00511008	SL	1		*	*	*	*
Store Width of Functional Image	0x00511009	SL	1		*	*	*	*
Store level of Functional Image	0x0051100a	SL	1		*	*	*	*
Store B-Value with Functional Image	0x0051100b	FL	1		*	*	*	*