COSMOS TABLES	7/31/2019

V 3.2.3

Table 01	Data Physical Parameter Codes
Cosmos Code	2/8/2012 Parameter
01	Acceleration
02	Velocity
03	Displacement (absolute)
04	Displacement (relative)
10	Angular acceleration
11	Angular velocity
12	Angular displacement
20	Pressure, absolute
21	Pressure, relative (gage)
30	Volumetric strain
31	Linear strain
60	Wind speed
61	Wind direction
* Cosmos Ihdr(2)	

Table 02	Data Units Codes
Cosmos Code	4/17/2013 Units
01	sec
02	g
03	secs & g
04	cm/sec/sec
05	cm/sec
06	cm
07	in/sec/sec
08	in/sec
09	in.
10	gal
11	mg
12	mg
23	deg/sec/sec
24	deg/sec
25	deg
50	counts
51	volts
52	mvolts
60	psi
61	kpa
70	miles/hour

80	mstrain
* Cosmos Ihdr(3)	

Table 03	**Record Type Codes**
Cosmos Code	4/17/2013 Record type
01	Seismic trigger
02	Remote trigger
03	Preset trigger
04	Manual trigger
05	Function test
06	Active source test
10	Sensor calibration
11	Amplifier calibration
12	Recorder calibration
13	Other calibration
* Cosmos Ihdr(5)	

Table 04	**Strong Motion Network Codes**		
Cosmos Code	3/3/2017 Agency	Abbrev. (4-ltr)	IRIS Code
01	U.S. Coast and Geodetic Survey[1]	C&GS	C_
02	USGS - National Strong Motion Project	USGS	NP
03	U.S. Bureau of Reclamation	USBR	RE
04	U.S. Army Corps of Engineers	ACOE	A_
05	Calif.Geol.Survey/Div.Mines& Geology[2]	CGS	CE
06	Calif.Inst.Technology/USGS, Pasadena	SCSN	CI
07	UC Berkeley	BDSN	BK
08	USGS - Northern Calif Regional Network	NCSN	NC
09	UC Santa Barbara	UCSB	SB
10	UC San Diego - ANZA	ANZA	AZ
14	UNR - W. Great Basin/E. Sierra Nevada	UNR	NN
15	UW - Pacific NW Regional Network	PNSN	UW
16	Caltech - Tectonics Observatory	CTO	TO
17	UA - Anchorage Strong Motion Network	AEIC	AA
20	Calif. Dept. Water Resources	CDWR	WR
21	Pacific Gas & Electric	PG&E	PG
30	USGS - National Seismic Network	NEIC	US
31	US Geological Survey Networks	USGS	GS
32	IRIS/USGS Network	IRGS	IU
33	Caribbean USGS Network	CUGS	CU
34	NetQuakes	NQGS	NQ
35	US National Seismic Network (USNSN)	USGS	US
36	Arkansas Seismic Network	ASN	AG
37	Alaska Regional Network	UAGI	AK

38	Arkansas Seismic Observatory, UALR	ASO	AO
39	Alaska Volcano Observatory	AVO	AV
40	Southern Appalachian Seismic Network	CERI	ET
46	Lamont-Doherty Coop. Seism. Network	LCSN	LD
47	LLNL NTS Network	LLNL	LL
48	Montana Regional Seismic Network	MRSN	MB
49	New England Seismic Network	NUSN	NE
50	Coop New Madrid Seismc Network, St Louis Univ	CNMSN	NM
51	Pacific Northwest Regional Sesmic Network	PNSN	UW
52	Univ of Utah Seismograph Stations	UUSS	UU
53	Yellowstone Wyoming Seismic Network	YWSN	WY
54	Puerto Rico Strong Motion Program	UPRM	PR
55	South Carolina Seismic Network	SCSN	CO
56	Hawaiian Volcano Observatory Network	HVO	HV
57	New China Digital Seismograph Network	USGS	IC
58	IRIS/IDA Seismic Network	SIO	II
59	Intermountain West Seismic Network	USGS	IW
60	Central and Eastern US Network	UCSD	NA
61	USArray Transportable Array (EarthScope_TA)	IRIS	TA
62	Eastern Caribbean Seismograph Network	SRTC	TR
63	Univ Chile, Dept of Geophysics	CNSN	C
100	Taiwan Central Weather Bureau	CWB	TW
107	UC Berkeley - Geysers Seismic Network	BGSN	BG
110	Bosai-Ken (NIED), Japan	NIED	BO
111	Univ. of Oregon Regional Network	UO	UO
199	Unspecified	UNK	--

* Notes

(1) IRIS code of "C_" adopted for C&GS (which was terminated before IRIS was established)

(2) CGS and CDMG may be used interchangeably.

_____

Cosmos code is located in Ihdr(11) (and secondarily in 12, 13, 14).

Table 05	**Latitude/Longitude Datum Codes**
Cosmos Code	v1.20, 8/15/2001 Datum
01	WGS84
02	NAD83
03	NAD27
04	WGS72

* Cosmos Ihdr(16)

Table 06	**Station Type Codes**
Cosmos Code	4/10/2013 Freefield, Ground Response or Reference Stations
01	Small fiberglass or other shelter (typ. ~1m^3; e.g., T-hut)

02	Small prefabricated metal bldg (typ. 1-2m x 1-2m x 2m high; eg, Armco)
03	Sensors buried/set in ground or deployed in shallow ground vault (within ~1m of surface)
04	Reference station (1-2 story, small (<4000 ft^2 or 370m^2), light building without basement)
05	Base of building larger than above
06	Freefield, Unspecified
07	Ocean-bottom sensors
08	Sensors in small near-surface vault (1-2m deep)
09	Sensors in underground observatory or large vault (~3m^3 or larger)
	Instrumented Structural or Array Stations
10	Building, sensor in upper levels
11	Bridge
12	Dam
13	Wharf
14	Tunnel or mine adit (3m or more from surface)
15	Other lifeline structure
20	Other structure
50	Geotechnical array (borehole) sensors, 2m or greater deep
51	Other array
52	Borehole
999	Unspecified

* Cosmos Ihdr(19)

Table 07	**Earthquake Parameter Information Source Codes**	
Code Cosmos	4/17/2013 Agency	IRIS Code
01	USGS	US
02	NEIC, Golden, Colo.	US
03	UC Berkeley	BK
04	Caltech, Pasadena	CI
05	NCSN, Northern Calif.	NC
06	SCSN, Pasadena, Calif.	CI
07	UCSD, San Diego, Calif.	AZ
08	UNR, Reno, Nevada	NN
09	USCGS	C_
10	CISN	-
11	CGS	CE
100	CWB, Taiwan	TW
110	Japan Meteorological Agency	JP
111	Bosai-Ken (NIED), Japan	BO
200	Other	

* Cosmos Ihdr(25)	

Table 08	**Recorder Timing Type Codes**
Cosmos Code	3/29/2011 Time Source for record
00	None
01	Recorder clock
02	Auxiliary clock (e.g., TCG)
03	Radio time signal (e.g., WWVB, WWVH)
04	Clock that tracks radio signal (WWVB, etc.)
05	GPS signal
06	Network time protocol (NTP)
20	Other

* Cosmos Ihdr(47)

Table 09	**Recorder/Datalogger Codes**
Cosmos Code	6/7/2017 Recorder/Datalogger
Analog Recorders	
1	C&GS Standard, USC&GS
2	AR-240, Teledyne
3	RFT-250, Teledyne
4	RFT-350, Teledyne
5	MO-2 (New Zealand)
6	RMT-280
7	SMA-1, Kinemetrics
8	SMA-2, Kinemetrics
9	SMA-3, Kinemetrics
10	CRA-1, Kinemetrics
Digital Recorders	
100	DSA-1, Kinemetrics
101	DSA-3, Kinemetrics
102	PDR-1, Kinemetrics
103	PDR-2, Kinemetrics
104	SSA-1, Kinemetrics
105	SSA-2, Kinemetrics
106	SSA-16, Kinemetrics
107	SSR-1, Kinemetrics
108	K2, Kinemetrics
109	Etna, Kinemetrics
110	Mt Whitney, Kinemetrics
111	Everest, Kinemetrics
112	Makalu, Kinemetrics
113	Etna-A, Kinemetrics
114	Etna-2, Kinemetrics
120	QDR, Kinemetrics
130	Granite, Kinemetrics
131	Basalt, Kinemetrics
132	Obsidian, Kinemetrics

133	Obsidian Multichannel, Kinemetrics
200	DR-100, Sprengnether
201	DR-200, Sprengnether
202	DR-300, Sprengnether
204	DR-3016, Sprengnether
203	DR-3024, Sprengnether
250	Trident, Nanometrics
251	Linx, Nanometrics
300	DCA-300, Terratech
301	DCA-310, Terratech
302	DCA-333, Terratech
310	IDS-3602, Terratech (IDS)
311	IDS-3602A, Terratech (IDSA)
400	A700, Geotech
401	A800, Geotech
402	A900, Geotech
403	A900A, Geotech
500	GEOS, US Geological Survey
550	GMS-18 (NetQuakes), Geosig
551	GRS-18, Geosig
600	Q4120, Quanterra
601	Q4128a, Quanterra
602	Q730, Quanterra
603	Q736, Quanterra
604	Q980, Quanterra
605	Q330, Quanterra
606	Q680, Quanterra
650	CMG-DM24-EAM, Guralp
651	Minimus, Guralp
700	72A, RefTek
701	130-01, Reftek
702	130-SM, Reftek
703	130-SMA, Reftek
704	130-ANSS, Reftek
705	130-SM5V, Reftek
706	130-MC, Reftek
707	130-SMHR, Reftek
710	148-01, Reftek (QuakeRock)
1000	Other
-	-

* Cosmos Ihdr(30)

Table 10	**Sensor Codes**
Cosmos	7/31/2019

Code	Sensor
Accelerometers	
1	Optical-mechanical (SMA,RFT,etc)
2	FBA-1, Kinemetrics
3	FBA-3, Kinemetrics
4	FBA-11, Kinemetrics
5	FBA-13, Kinemetrics
6	FBA-13DH, Kinemetrics
7	FBA-23, Kinemetrics
8	FBA-23DH, Kinemetrics
20	Episensor, Kinemetrics
21	Episensor ES-U, Kinemetrics
22	Episensor ESDH, Kinemetrics
23	Episensor ES-US, Kinemetrics
50	FBX-23, Sprengnether
51	FBX-26, Sprengnether
100	SSA 120, Terratech
101	SSA 220, Terratech
102	SSA 320, Terratech
150	731A, Wilcoxon
200	CMG-5, Guralp
201	CMGXXX
202	Fortis, Guralp
250	131A-02/1, Reftek
251	131A-02/3, Reftek
252	131A-02/BH, Reftek
253	131B-01/1, Reftek
254	131B-01/3, Reftek
255	131A-02/3/INT, Reftek
256	131-8019, Reftek
257	131-8050
258	147A-01/1, Reftek
259	147A-01/3, Reftek
260	131-X (Unk)
300	ADXL325, Analog Devices
330	SF2005 MEMS, Colibrys
350	LIS344ALH, STMicroelectronics
380	7751-500, Endevco
400	AC63, Geosig
450	Titan, Nanometrics
480	TSA-100S, Metrozet

900	Other accelerometer
Velocity Sensors/Seismometers	
1001	SS-1 Ranger, Kinemetrics
1002	MBB-2 Broadband, Kinemetrics
1050	S-3000, Sprengnether
1051	S-6000, Sprengnether
1100	Trillium 240, Nanometrics
1201	CMG-1, Guralp
1202	CMG-3T, Guralp
1203	CMG-3ESP, Guralp
1204	CMG-40, Guralp
1250	STS-1, Strecheisen
1251	STS-2, Strecheisen
1300	L4, Mark Products
1301	L22, Mark Products
1900	Other seismometer
Other Sensors	
3000	Pressure series
3001	PDCR-35/D, Druck
3002	PDCR-940, Druck
3003	PTX/PCDR-1830, GE/Druck
3010	30, MEAS/KPSI
3011	330, MEAS/KPSI
3012	730, MEAS/KPSI
3020	8WD, ParoScientific
3200	Wind Series
3201	Young - Speed
3202	Young - Direction
3500	Dilatometer series
4000	Relative displacement series
4001	UltraS, Senix Ultrasonic
4002	TS-30S1, Senix Ultrasonic
4020	Extensometer, FirstMark
4500	Rotational series
4501	EENT
4800	Tiltmeter Series

4801	Model 801-S Longitudinal, Jewell Inst.
4802	Model 801-S Transverse, Jewell Inst.
9000	Other sensor
* Cosmos Ihdr(52)	

Table 11	**Sensor Direction Codes***
Cosmos Code	12/7/2011 Orientation
1-360	Horizontal azimuth, clockwise (east) from North
400	Up
401	Down
402	Vertical, sense not indicated
500	Radial, inward (-500 for outward)
501	Transverse, 90 deg CW from radial comp. (-501
	for CCW from radial comp.)
600	Longitudinal (relative to structure)
601	Tangential (relative to structure)
700	H1 (horiz. sensor, azimuth unknown)
701	H2 (horiz. sensor, azimuth unknown)
702	X (horiz. sensor, azimuth unknown)
703	Y (horiz. sensor, azimuth unknown)
704	Z (horiz. sensor, polarity not indicated)
1001-	Horizontal azimuth relative to Chn 1, if absolute
1360	not known (e.g., Chn 2 is 1090 if it is 90 deg
	clockwise of Chn 1)
2000	Other (described in comments)

*Notes
1) The direction specified is the direction of motion of the ground (or the structural element the sensor is attached to) that corresponds to upward motion of the trace and positive-going signal values.
2) Referenced in Cosmos Ihdr(54) for absolute, and in Ihdr(55) for relative values.

Table 12	**Codes for Filter Types used in Processing**
Cosmos Code	5/23/2008 Filter type
0	None
1	Rectangular
2	Cosine bell
3	Ormsby
4	Butterworth, single direction (causal)
5	Butterworth, bi-directional (noncausal)

6	Bessel

Note
Used in Cosmos Ihdr(61) and Ihdr(62)