

WAS - IS MATRIX

Document/Change Number:
ICD-GPS-870, IRN 001

ICC Name:
Jaime O. Valdivia

TIM Date:
RFC 41: 7-OCT-2010
RFC 45: 17-NOV-2010

CP NUMBER	SECTION NUMBER	REQ ID	WAS	IS	RATIONALE (Reason For Change)
RFC-00041: GPS User Support Community OCX Data Formats					
	Sect 10, pg. 10-1		Appendix 1 describes the NANU types and the NANU message format that are used in the OCS/AEP era. The next revision of this ICD (Rev A) will contain the OCX NANU data formats which will account for the increase in SV constellation and the inclusion of the GPS III fleet during the OCX era.	Appendix 1 describes the NANU types and the NANU message format.	Deleted sentences after NANU message format. Data formats are being updated for OCX, thus those sentences are not needed anymore
	Sect 10, Figures		SVNXX	SVNXXX	Increased the SVN # field from 2 to 3 digits due to SV constellation increase in the OCX era (32 to 63 SVs). See Figures 10-1 through 10-10, 10-12, 10-14 through 10-16
	Sect 10, Figure 10-13		3. FOR GPS, AS WITH PREVIOUS LEAP SECOND UPDATES, THE UTC DATA IN SUBFRAME 4, PAGE 18 OF THE NAVIGATION MESSAGE WILL CHANGE IN ACCORDANCE WITH ICD-GPS-200.	3. FOR GPS, AS WITH PREVIOUS LEAP SECOND UPDATES, THE UTC DATA IN SUBFRAME 4, PAGE 18 OF THE NAVIGATION MESSAGE WILL CHANGE IN ACCORDANCE WITH IS-GPS-200. FOR GPS, IF/AS AVAILABLE, THE UTC DATA IN MESSAGE TYPE 33 OF THE CNAV DATA FOR L2C WILL CHANGE IN ACCORDANCE WITH IS-GPS-200. FOR GPS, IF/AS AVAILABLE, THE UTC DATA IN SUBFRAME 3, PAGE 1 OF THE CNAV-2 DATA FOR L1C WILL CHANGE IN ACCORDANCE WITH IS-GPS-800. FOR GPS, IF/AS AVAILABLE, THE UTC DATA IN MESSAGE TYPE 33 OF THE CNAV DATA FOR L5 WILL CHANGE IN ACCORDANCE WITH IS-GPS-705.	1. The LEAPSEC NANU message template (line #3) describes the leap second update only for the legacy NAV broadcast. This NANU should be modified to also describe the leap second update for the modernized signals: L2C – IS-GPS-200, Message Type 33 L5 – IS-GPS-705, Message Type 33 L1C – IS-GPS-800, Subframe 3, Page 1 M-Code (MNAV) – ICD-GPS-700, Message Type XX (M-Code reference in data will not be shown) 2. Delete redundant L5
	Sect 10, Figure 10-17 through 10-23		Old Figures and Figure Titles from ICD Initial Release version	See new Figures in Section 10 and Figure Titles	Replaced Figures 10-17 through 10-23, which contained an actual NANU example, with Figures of a NANU template. Deleted Example from Title of Figures 10-17 through 10-22

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	Sect 10.3.2.3 & 10.3.3, 1st paras		<p>Sect 10.3.2.3 The identification information includes the satellite two-digit SVN and two-digit PRN number.</p> <p>Sect 10.3.3 ...Section 2 is a summary of the NANU in paragraph format including the satellite two-digit SVN and two-digit PRN number...</p>	<p>Sect 10.3.2.3 The identification information includes the satellite three-digit SVN and two-digit PRN number.</p> <p>Sect 10.3.3 ...Section 2 is a summary of the NANU in paragraph format including the satellite three-digit SVN and two-digit PRN number...</p>	Increased the SVN # field from 2 to 3 digits due to SV constellation increase in the OCX era (32 to 63 SVs).
	Sect 20, pg. 20-1		Appendix 2 describes the Operational Advisory message format that is used in the OCS/AEP era. The next revision of this ICD (Rev A) will contain the OCX OA data formats which will account for the increase in SV constellation and the inclusion of the GPS III fleet during the OCX era.	Appendix 2 describes the Operational Advisory message format.	Deleted sentences after Operational Advisory message format. Data formats are being updated for OCX, thus those sentences are not needed anymore
	20.1 Fig 20-1 & 20.3 Fig 20-3			<p>C. BLOCK III: PRNS 33, 34, 35 PLANE: SLOT A2, C3, F4 CLOCK: RB, RB, RB</p> <p><i>Add Note to Figure 20-1:</i> *Note: Section 1.C of the OA message contains example data for the GPS III SVs to show the type of data that will go in this section in the OCX era. This example is not meant to represent the actual GPS constellation configuration.</p> <p><i>Add sentence, similar to note, in Section 20.3:</i> Subsection 1.C identifies satellites within Block III that are currently in use. The example data shown for Section 1 is not meant to represent the actual GPS constellation configuration.</p>	<p>1. Added Section 1C in Figure 20-1 (OA) to account for GPS III SVs in the OCX era. Entered TBDs under PRNs, Slot and Clock</p> <p>2. Recommend replacing the TBDs in section 1.C with some dummy data to better show what goes in this section.</p>

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	Section 20, Fig 20-2 thru 20-5			See updated format of Figures in Section 20	Updated the format of Figures 20-2 through 20-5 which contains the same information as the old figures, except for Figure 20-3, which now accounts for the GPS III SVs
	Sect 30, pg. 30-1		Appendix 3 describes the SEM and YUMA Almanac message formats that are used in the OCS/AEP era. The next revision of this ICD (Rev A) will contain the OCX Almanacs data formats which will account for the increase in SV constellation and the inclusion of the GPS III fleet during the OCX era.	Appendix 3 describes the SEM and YUMA Almanac message formats.	Deleted sentences after Almanac message format. Data formats are being updated for OCX, thus those sentences are not needed anymore
	Sect 30-3, pg. 30-1		Table 30-I shows the 3 MCS health categories for satellites commonly used by 2 SOPS.	Table 30-I shows the 3 MCS health categories for satellites commonly used by 2 SOPS (ACTIVE, BAD & DEAD).	Added the three health categories for clarification
	Section 30.3.1, pg. 30-3		Section 30.3.1 & Table 30-II no longer exist. Content moved to new Appendix 4		Delete Section 30.3.1

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	Sect 40			<i>See newAppendix 4</i>	<p>1. Add to new Appendix 4 to capture Extended Signals Health Status (ESHS). In the OCX era, three new GPS civil signals (L1C, L2C and L5) will be available, in addition to current L1 C/A signal. Therefore, the implementation of the new signals requires that the almanac data also contain the health status of each signal for each SV. We have created an Extended Signals Health Status (ESHS) file to fully make use of the health status of the new civil signals. See Appendix 4 for this new implementation</p> <p>2. The statement about SEM and YUMA is not necessary in this ESHS section</p> <p>3. The modulo-1024 representation for GPS Week number is zero-based, permitting a range of 0-1023</p> <p>4. The modulo-1024 representation for GPS Week number is zero-based, permitting a range of 0-1023</p>
	Section 60, App 6		Appendix 4 was Letters of Exception. Letters of Exception Section is now Appendix 6: 40 APPENDIX 4: LETTERS OF EXCEPTION	New Appendix 4 is now Extended Signals Health Status Files: 60 APPENDIX 6: LETTERS OF EXCEPTION	Move Letters of Exception Section to Appendix 6
	Section 30.4, Fig 30-1		R-2 row: 32 Line 1: CURRENT.ALM	R-2 row: 032 Line 1: CURRENT.AL 3	Increased the SVN # field from 2 to 3 digits by adding a zero in front of 32. Change file name to Current.al3

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	Section 30.4, Table 30-II		Table 30-III	Table 30-II (Note on Figure 30-1 and Table Title)	Table 30-III is now 30-II because Table 30-II was moved to Appendix 4. The Notes to Table 30-II have been moved to the bottom row of the Table and are now part of the Table
	Section 30.5, 2nd para		Figure 30-2 illustrates one record in a sample YUMA almanac file. Line one of each record identifies the week in which the file was generated as well as the PRN number of the subject SV. The maximum number of records in a YUMA almanac file is 32.	Figure 30-2 illustrates one record in a current.alm YUMA Almanac file sample . The maximum number of records in a current.alm file is 32 and this file addresses PRNs 1-32. Line one of each record identifies the week in which the file was generated as well as the PRN number of the subject SV. There is an additional YUMA file with a file name extension of .blm that is identical to .alm, except that it addresses PRNs 33-63 and the maximum number of records is 31.	In the OCX era, there will be two YUMA Almanac files, current.alm and current.blm. Current.blm is a new file and the Number of records of this file is 31 (PRNs 33-63) Please see row 61 for additional changes to this paragraph (PRN range 01-63 and record number 00-63)
	Title Page, Section 1.3, and more...		Title Page & Sections 1.1 & 1.3: United States Coast Guard (USCG) Navigation Center (NAVCEN)	Title Page & Sections 1.1 & 1.3: Department of Homeland Security (DHS) United States Coast Guard (USCG) Delete NAVCEN from the following areas: Figure 1, Table I, Section 3.1.2 1st para, Section 3.2 1st para, Section 3.2.6 Title, Section 3.2.6 1st para, Section 3.2.6 2nd para, Section 3.2.8 1st para, & Table II Add DHS to the following areas: Figure 1, Table I, Section 3.1.2 1st para, Section 3.2 1st para, Sect 6.1 Add USCG to the following areas: Section 3.2.5 Title, Section 3.2.5 1st para, Section 3.2.5 2nd para, Section 3.2.7 1st para, & Table II	Per USCG request, change USCG NAVCEN signature block to DHS USCG.

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	Sect 2.1, pg. 3			ICD-GPS-700 Current Version Navstar GPS Military-Unique Space Segment / User Segment Interfaces	Added ICD 700 to Government Documents, since it is being referenced in Figure 10-13 (M-Code (MNAV) – ICD-GPS-700, Message Type 11)
	Sect 3.1, Table I		Table I: GPS Constellation Orbital and Performance Parameters	Table I: GPS Constellation Orbital and Performance Parameters, and SV Signal Health Status	Added Extended Signals Health Almanac implementation
	Sect 3.2.1, pg. 7		The GPS OCX generates the Almanac data for the GPS constellation, one current System Effectiveness Model (SEM) format almanac (current.al3), and one current YUMA format almanac (current.alm). The satellite almanac data contains orbital and performance parameters for operational GPS satellites. Detailed data formats of the SEM and YUMA almanac data are described in Appendix 3 of this ICD.	The GPS OCX generates the Almanac data for the GPS constellation, two current System Effectiveness Model (SEM) format Almanac (current.al3 and current.bl3), two current YUMA format Almanac (current.alm and current.blm), and one current Extended Signals Health Status (ESHS) format Almanac (current.ale). The satellite SEM and YUMA Almanac data contains orbital and performance parameters for operational GPS satellites. Detailed data formats of the SEM and YUMA Almanac data are described in Appendix 3 of this ICD. The satellite ESHS Almanac data contains the health status of each of the modernized civil signals available for each SV – L1C, L2C and L5. Detailed data formats of the ESHS Almanac data are described in Appendix 4 of this ICD.	1. Added Extended Signals Health Almanac implementation 2. Add references to the new almanac files, current.blm and current.bl3, for PRNs 33-63 3. Clarification on last sentence (modernized civil signals) to make the paragraph easier to read
	Sect 6.1			DHS Department of Homeland Security	Added DHS to Acronym list
	Global		SIPRNET	SIPRNet	Standardize capitalization of SIPRNet
	Global		internet	Internet	Standardize capitalization of Internet
	Global		almanac	Almanac	Standardize capitalization of Almanac

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	Sect 1.1		The GPS OCX is operated by the 2nd Satellite Operations Squadron (2 SOPS), administratively organized under 50th Space Wing (50 SW). The GPS user and user-support communities are comprised of the United States Coast Guard (USCG) Navigation Center (NAVCEN), Department of Transportation (DOT), Federal Aviation Administration (FAA), and various Military GPS users. The interfaces between the GPS OCX and the NAVCEN, FAA and the GPS OCX and the Military GPS user community are implemented using electronic mail (e-mail), internet and SIPRNET. This ICD does not include detailed technical descriptions of the e-mail system, internet or SIPRNET.	The GPS OCX is operated by the 2nd Satellite Operations Squadron (2 SOPS), administratively organized under 50th Space Wing (50 SW). The GPS user and user-support communities are comprised of the Department of Homeland Security (DHS) United States Coast Guard (USCG); Department of Transportation (DOT), Federal Aviation Administration (FAA); other Civil users ; and various Military GPS users. The interfaces between the GPS OCX and the USCG, FAA, other Civil users , and the Military GPS user community are implemented using electronic mail (e-mail), Internet and SIPRNet. This ICD does not include detailed technical descriptions of the e-mail system, Internet or SIPRNet.	Grammar change; Acknowledge that there are other Civil users outside of DHS/USCG and DOT/FAA
	Sect 1.2		GPS OCX system beginning with Effectivity 10	GPS OCX system beginning with Effectivity 10 as defined in SS-CS-800	Add reference to SS-CS-800 in order to define "Effectivity 10"
	Sect 1.3		5. Raytheon Company	5. Raytheon Company, OCX Contractor	Identify why Raytheon is a signatory like for the other four organizations
	Figure 1		MCS (top of left box), SAFB (bottom of left box)	MCS/ AMCS (top of left box), SAFB/ VAFB (bottom of left box)	Need to call out backup since both MCS at SAFB and AMCS at VAFB provide the same services
	Figure 1		DHS USCG/DOT FAA (top sub-box in right box)	DHS USCG/DOT FAA/ Other Civil Users (top sub-box in right box)	Acknowledge that there are other Civil users outside of DHS/USCG and DOT/FAA
	Table I		DHS USCG / DOT FAA * (three locations)	DHS USCG / DOT FAA / Other Civil Users * (four locations)	Acknowledge that there are other Civil users outside of DHS/USCG and DOT/FAA

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	3.1.2		The GPS user and user-support communities involve the Civil and Military GPS users which are comprised of the United States Coast Guard (USCG) Navigation Center (NAVCEN), Department of Transportation (DOT) Federal Aviation Administration (FAA), and various Military GPS users.	The GPS user and user-support communities involve the Civil and Military GPS users which are comprised of the Department of Homeland Security (DHS), United States Coast Guard (USCG); Department of Transportation (DOT), Federal Aviation Administration (FAA); other Civil Users ; and various Military GPS Users.	Grammar change; Acknowledge that there are other Civil users outside of DHS/USCG and DOT/FAA
	3.2		The following subsections define the functional requirements and physical interface between the GPS OCX and the USCG NAVCEN, DOT FAA and the Military GPS user community.	The following subsections define the functional requirements and physical interface between the GPS OCX and the DHS USCG, DOT FAA, other Civil Users , and the Military GPS User Community.	Acknowledge that there are other Civil users outside of DHS/USCG and DOT/FAA
	Table II		(none)	<i>(add row for section 3.2.8 and note)</i> 3.2.8 GPS MCS to the United States Notice to Airman Office Interface N/A* N/A* * No verifiable requirements in this section.	Indicate "N/A" for both the Verification Method and Verification Level since there are no verifiable requirements in that section. No verification row exists for section 3.2.8 of the document OBE, see row 86
	10.3		The NANU message structure for all messages, except the General, LAUNCH and DECOM messages	The NANU message structure for all messages, except the General, LAUNCH, DECOM, and LEAPSEC messages	The LEAPSEC NANU message also has a unique message structure
	10.3.1		The ID number consists of the four-digit year followed by a sequentially assigned three-digit number which begins at 001 for the first NANU on the first day of a new year.	The ID number consists of the four-digit year followed by a sequentially assigned three-digit number which begins at 001 for the first NANU on the first day of a new year. The ID number is incremented for each new NANU up to a maximum of 999 in any given calendar year, after which the ID number rolls over and begins numbering subsequent NANUs beginning with 001.	Recommend adding a sentence that states the NANU number will roll over from 999 to 001 for the 1000th message and beyond
	Fig 10-17		SUBJ: SVNXXXX (PRNXX)	SUBJ: SVNXXX (PRNXX)	There are 4 X's instead of the actual 3 X's in the SVN number

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	Fig 10-17 Fig 10-18 Fig 10-19 Fig 10-20 Fig 10-21 Fig 10-22		XXX (none of the three X's is marked as change)	XXX (mark one of the three X's as a change in this revision)	The SVN number increases from two digits to three, so all locations need to have one of the X's marked as a change in this rev of the 870
	10.3.2 20.3 Fig 20-3		Section One	Section 1	Standardize numerical section numbers in appendix
	10.3.3 20.4 Fig 20-4		Section Two	Section 2	Standardize numerical section numbers in appendix
	10.3.4 20.5 Fig 20-5		Section Three	Section 3	Standardize numerical section numbers in appendix
	20.3		Subsection 1.B identifies satellites within Block II that are currently in use. The abbreviations CS and RB are used to indicate Cesium and Rubidium clocks, respectively.	Subsection 1.B identifies satellites within Block II that are currently in use. Subsection 1.C identifies satellites within Block III that are currently in use. The example data shown for Section 1 is not meant to represent the actual GPS constellation configuration. The abbreviations CS and RB are used to indicate Cesium and Rubidium clocks, respectively.	Need to add sentence for 1.C similar to those for 1.A and 1.B.
	30.3		Users of the SEM and YUMA almanacs shall be prepared for any potential future 2 SOPS use of the "OTHER" MCS health category.	Users of the SEM and YUMA Almanacs should be prepared for any potential future 2 SOPS use of other MCS health categories, as defined by codes in IS-GPS-200, Table 20-VIII.	1. We cannot put a requirement on the users 2. Provide additional information to complete this sentence - a quantifier sentence
	30.5, 1st para		The SEM parameters are the same as defined in IS-GPS-200 and broadcast from an SV.		This sentence is not necessary in this YUMA section
	Sect 1.1, 2nd para		Almanacs (SEM and YUMA)	Almanacs (SEM, YUMA, and Extended Signals Health Status (ESHS))	Acknowledge that there is a new Almanac called ESHS

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	Sections 3.2.5, 3.2.6, 6.1		Section 3.2.5: File Transfer Protocol (FTP) Section 3.2.6: FTP Section 6.1: FTP File Transfer Protocol	Section 3.2.6: Hypertext Transfer Protocol Secure (HTTPS) Section 3.2.7: HTTPS Section 6.1: HTTPS Hypertext Transfer Protocol Secure	Downloads of data is not via FTP. Replace FTP with HTTPS. 2 SOPS website is HTTPS
	30.4		The SEM format, as shown in Figure 30-1, is arranged with a header that identifies the number of records (number of satellites) and file name (extension .al3). The SEM almanac sample illustrated below is a data sample of one record out of 28 in this sample file.	The SEM format file example in Figure 30-1 is arranged with a header that identifies the number of records (number of satellites) and file name (current.al3). The SEM Almanac sample illustrated below is a data sample of one record out of 28 in this sample file and its parameter definition, as stated in the note of Figure 30-1, is in Table 30-II. There is an additional SEM file with a file name extension of .bl3 that is identical to .al3, except for the parameters listed in Table 30-III.	Add new current.bl3 SEM file for OCX - PRNs 33-63. Each Almanac format is broken into two files. YUMA files are named current.alm (PRNs 1-32) and current.blm (PRNs 33-63). SEM files are named current.al3 (PRNs 1-32) and current.bl3 (PRNs 33-63) OBE - Table 30-III now contains all parameters of .bl3 and the PRN range for .bl3 is now 01-63 - See rows 73 & 85
	30.4			<i>Please see Table 30-III (new)</i> Table 30-III SEM Almanac Description for Current.bl3	Add table showing current.bl3 parameters that are different from the current.al3 file
	30.5		Figure 30-2 illustrates one record in a sample YUMA almanac file. Line one of each record identifies the week in which the file was generated as well as the PRN number of the subject SV. The maximum number of records in a YUMA almanac file is 32. Figure 30-2 YUMA Almanac Data Sample	Figure 30-2 illustrates one record in a current.alm YUMA Almanac file sample. The maximum number of records in a current.alm file is 32 and this file addresses PRNs 1-32. Line one of each record identifies the week in which the file was generated as well as the PRN number of the subject SV. There is an additional YUMA file with a file name extension of .blm that is identical to .alm, except that it addresses PRNs 33-63 and the maximum number of records is 31. Figure 30-2 YUMA Almanac Data Sample for Current.alm	1. Add new current.blm YUMA file for OCX - PRNs 33-63. Each Almanac format is broken into two files. YUMA files are named current.alm (PRNs 1-32) and current.blm (PRNs 33-63). SEM files are named current.al3 (PRNs 1-32) and current.bl3 (PRNs 33-63) 2. Update title of Figure 30-2 The PRN range of the .blm file is now 01-63 - See row 85

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	App 1 Figures: Figs 10-1 thru 10-10 & Figs 10-12 thru 10-15		3. POC: CIVILIAN - NAVCEN AT 703-313-5900, HTTP://WWW.NAVCEN.USCG.GOV	3. POC: CIVILIAN - NAVCEN AT 703-313-5900, HTTP://WWW.NAVCEN.USCG.GOV CIVIL AVIATION - TBD	Add Civil Aviation POC as TBD in NANU data formats, Section 3
	New Section (3.2.4), New App (5), & global			Section 3.2.4: Generation of Anti Spoofing Status 50 APPENDIX 5: ANTI SPOOFING STATUS FILE Global: Add Anti Spoofing (A-S) Status reference, where applicable	A-S Status is currently posted on the 2 SOPS website. Will OCX have to post the A-S Status as well? Yes, there are SEM Users that need the A-S Status file
RFC-00045: Information Assurance Requirements Standardization across OCX Interface Documents					
	New Section 3.3			3.3 GPS MCS to GPS User Support Community Information Assurance Requirements GPS OCX will sign all ICD-GPS-870 information with a DoD Public Key Infrastructure (PKI) provided certificate specific for this purpose. This will ensure that the information provided by this interface is genuine and originates from the GPS MCS. The OCX certificate (and corresponding public key) will be made available to all users for data integrity verification and source authentication. DoD PKI root certificates are available on the DoD Class 3 Public Key Infrastructure (PKI) website, http://dodpki.c3pki.chamb.disa.mil/ , to verify the certificate chain.	Add IA requirements for data integrity. OCX must ensure to all Users that ICD-870 information is genuine and originates from the OCX MCS OBE, see row 81
	8.1			3.3 GPS MCS to GPS User Support Community Information Assurance Requirements	Add new IA requirements to VCRM OBE, see row 86
	6.1			DoD - Department of Defense PKI - Public Key Infrastructure	Add DoD and PKI to the Acronym's list

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Government TIM and Public ICWG Updates					
	3.2.1		"...System Effectiveness Model (SEM) format Almanac (current.al3 and current.bl3), two current YUMA format Almanac"	"...System Effectiveness Model (SEM) format Almanacs (current.al3 and current.bl3), two current YUMA format Almanacs"	Need to update "Almanac" to "Almanacs" to be gramatically correct.
	Figure 10-14		SVN XXX (PRN XX)	SVNXXX (PRNXX)	Remove the space between "SVN" and "XXX" and also between "PRN" and "XX" in order to be consistent with the header format of all NANUs.
	30.5		"...except that it addresses PRNs 33-63 and the maximum number of records is 31."	"...except that it addresses PRNs 01-63 and the range of number of records or ID number in a current.blm file is 00-63."	This wording provides clarification and delineates between .alm and .blm files.
	Appendices 3 & 4			Specified blank spaces in the following data formats: .ale (new ESHS), .blm (new YUMA), .bl3 (new SEM). Please see Tables 30-III and 40-II	The new or modified file formats: .nnu (updated NANU), .ale (new ESHS), .blm (new YUMA), .bl3 (new SEM), and .oa1 (updated OA) , and .as2.txt (new A-S Status) handle a larger number of SVNs and/or PRNs and more clearly specify zero padding and whitespace so automated parsing can be done with less assumptions.
	Page iii		Update data formats for OCX (RFC-00041). Add IA requirements (data integrity) for this interface (RFC-00045)	Update data formats and add the A-S Status and ESHS files for OCX (RFC-00041). Add IA requirements (data integrity) for this interface (RFC-00045)	The major changes are not limited to existing data formats and new IA requirements. Include A-S Status and ESHS in Rev Record
	1.1		The format of these files are defined in the Appendices of this document.	The formats of these files are defined in the Appendices of this document.	There are multiple files, each with unique formats, so "format" should be made plural. This fits grammatically with the existing "are".
	1.1		The GPS OCX is operated by the 2nd Satellite Operations Squadron (2 SOPS), administratively organized under 50th Space Wing (50 SW).	The GPS OCX is operated by the 2d Space Operations Squadron (2 SOPS), administratively organized under 50th Space Wing (50 SW).	Need to correct name of 2 SOPS.

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	2.1		ICD-GPS-700 Current Version Navstar GPS Military-Unique Space Segment / User Segment Interfaces		ICD 700 is not referenced anywhere in the document, so please delete it from Applicable Docs.
	3.1		all legacy signals and the new signals L1C, L2C, L5, and M-Code.	all legacy signals and the new Civil signals L1C, L2C, and L5.	M-code is not and should not be discussed anywhere in this public document.
	Figure 1		Almanacs, NANUs, OAs, and A-S	Almanacs, NANUs, OAs, and A-S Status	Per government direction, "A-S" should be everywhere replaced by "A-S status" or something similar.
	Figure 1		SIPRNet	SIPRNet	Standardize the font in the figure
	3.1.1		The GPS OCX is operated by the 2nd Satellite Operations Squadron (2 SOPS), administratively organized under 50th Space Wing (50 SW).	The GPS OCX is operated by the 2d Space Operations Squadron (2 SOPS), administratively organized under 50th Space Wing (50 SW).	Need to correct name of 2 SOPS.
	Global		users	Users	"Users" is capitalized in some locations and not in others.
	3.2.7		Only authorized Military GPS users with SIPRNet connectivity can download a NANU, OA, or Almanac data file using HTTPS.	Only authorized Military GPS users with SIPRNet connectivity can download a NANU, OA, A-S status, or Almanac data file using HTTPS.	A-S status was left off of the list of downloadable files.
	30.4		Figure 30-1 SEM Data Sample	...and its parameter definition, as stated in the note of Figure 30-1, is in Table 30-II. There is an additional SEM file with a file name extension of .bl3 that is identical to .al3, except for the number of records range, PRN number range and SVN number field. All parameters are listed in Table 30-III. Figure 30-1 SEM Data Sample for Current.al3	The data sample in Figure 30-1 applies to Table 30-II. Table 30-III describes the parameters of the .bl3 file. The Figure should state: Figure 30-1 SEM Data Sample for Current.al3

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	Appendices			Specified zero padding in the following data formats for SVNs and PRNs : .nnu (updated NANU), .ale (new ESHS), .blm (new YUMA), .bl3 (new SEM), and .oa1 (updated OA) , and .as2.txt (new A-S Status)	The new or modified file formats: .nnu (updated NANU), .ale (new ESHS), .blm (new YUMA), .bl3 (new SEM), and .oa1 (updated OA) , and .as2.txt (new A-S Status) handle a larger number of SVNs and/or PRNs and more clearly specify zero padding and whitespace so automated parsing can be done with less assumptions
	1.1, 3.1, 6.1, 3.1.1, & Cover Page		This Interface Control Document (ICD) defines the functional data transfer interface between the Next Generation Global Positioning System (GPS) Operational Control Segment (OCX) ...	This Interface Control Document (ICD) defines the functional data transfer interface between the Global Positioning System (GPS) Control Segment (CS) and the GPS User and User-support communities for the GPS Next Generation Operational Control System (OCX) .	Consistent definition of the term "GPS OCX". Per the GPS Directorate OIPT, OCX stands for Next Generation Operational Control System.
	1.3		<ol style="list-style-type: none"> 1. Air Force Space Command (AFSPC), GPS Wing Directorate (GPSW) Space and Missile Systems Center (SMC) 2. Department of Homeland Security (DHS), United States Coast Guard (USCG), Navigation Center (NAVCEN) 3. Air Force Space Command (AFSPC), 50th Space Wing (50 SW) 4. Department of Transportation (DOT), Federal Aviation Administration (FAA) 5. Raytheon Company, OCX Contractor 	<ol style="list-style-type: none"> 1. Air Force Space Command (AFSPC), GPS Wing Directorate (GPSW) Space and Missile Systems Center (SMC) 2. Air Force Space Command (AFSPC), 50th Space Wing (50 SW) 3. Raytheon Company, OCX Contractor 4. Department of Homeland Security (DHS), United States Coast Guard (USCG), Navigation Center (NAVCEN) 5. Department of Transportation (DOT), Federal Aviation Administration (FAA) 	Consistent list of signatories between the Cover Page and section 1.3.
	Table I		Data Information Exchange - GPS Constellation Status Summary Information Description - A-S	Data Information Exchange - GPS Constellation Anti-Spoofing Status Information Description - A-S Status	Accurate definition of A-S informaiton exchange.

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	3.2.6		... Other approved/authorized GPS users with .mil or .gov e-mail accounts also receive automatic NANUs. Automatic e-mail distribution implies that OCX will maintain a distribution list of approved e-mail addresses.	... Other 2 SOPS approved/authorized GPS Users also receive automatic NANUs.	It is not necessary for this ICD to describe how OCX implements automated e-mail distribution. Delete reference to .mil and .gov e-mail addresses because 2 SOPS also approves other Users
	6.1			DD - Calendar Day (2 digits) GPSW - GPS Wing HDBK - Handbook HH = Hour (2 digits) HTTP - Hypertext Transfer Protocol IERS - International Earth Rotation Service JJJ - Julian Date (3 digits) MIL - Military MMM - Month (3 characters) MM - Minutes (2 digits) NNN - NANU Number (3 digits) RAD - Radians RFC - Request for Change SPS - Standard Positioning Service SS - System Specification SSS - Seconds (3 digits) STD - Standard TBD - To Be Determined UTC - Coordinated Universal Time YYYY - Year (4 digits) Z - Zulu	Complete listing of acronyms.
	20.1		*Note: Section 1.C of the OA message contains example data ...	*Note: Section 1.C of the example OA message shown above contains example data ...	Clarity the note about sample data only applies to the example OA shown.
	3.3			Please see Section 3.3	Section 3.3 has been rewritten by the IA group to describe how digital signatures are applied to the data in email and web site for data integrity.

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	1.1		The files that are distributed by the GPS OCX are: Almanacs (SEM, YUMA, and Extended Signals Health Status (ESHS)), Operational Advisories (OAs), Anti-Spoofing (A-S) status, and Notice Advisory to Navstar Users (NANUs).	The files that are distributed by the GPS OCX are: Almanacs (System Effectiveness Model (SEM)), YUMA, and Extended Signals Health Status (ESHS)), Operational Advisories (OAs), Anti-Spoofing (A-S) status, and Notice Advisory to Navstar Users (NANUs).	SEM - First Use Explain the acronyms.
	30.4		SVN: 0-999	SVN: 0-255	The SVN is described by an 8 bit number - 255 max
	6.1		IERS International Earth Rotation Service	IERS International Earth Rotation and Reference Systems Service	While that acronym was correct a few years ago, as fate would have it, that organization has decided to rename itself
	Apps 3-5, 30.1, 30.4, 30.5, 40.1, 50.1			PRN: 01-63 # of Records: 00-63	Define new files from PRN 01-63 Users that update their systems in OCX, will not have to use the legacy and new files. They would only use the new files.
	3.2.8			We had added Section 3.2.8 VCRM in this up rev, but then it was deleted. See row 36	There will not be any requirements in this ICD - no shall statements. VCRM in ICD will be deleted. The CS-800 which applies to OCX, contains requirements to generate data described in this ICD and distribute the data per ICD 870.

Post Public ICWG Updates

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	1.1, 2nd para			All data files transferred as described in this ICD are unclassified and are assumed to be publicly releasable per the current GPS CS mode of operations.	Add Distribution A statatement to every data file in this interface per AFI 61-204. Held a meeting with the GP OCX IPT, GPEA and Karl Kovach for a decision on this issue. Tim Abel's decision was not to add the Dist Statement A on the files, but do draft the ICD such that it states that these files are publicly releasable, just in case the 50 SW PA letter is not received by CCB date (8/11). ICD should be able to stand alone as far as releasability of data is concerned

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	1.1, 3rd & 4th para			<p>In order to continue to support legacy Users who may not be able to update their code, the .alm (YUMA), .al3 (SEM), and as.txt (A-S Status) file formats are not changing and legacy Users are assured that they will continue to use these file types in the OCX era without changes to their systems. At the same time, the GPS CS does announce that it does not intend to make future updates to these file formats: .alm, .al3 and as.txt. The GPS CS encourages new Users and existing Users migrate to the newer file formats (.blm, .bl3, as2.txt), and in the future may propose to remove these legacy file formats in future updates to GPS CS. The GPS CS shall still be required to coordinate a specific timeframe or process in a public ICWG for the removal of a currently supported file formats.</p> <p>The new or modified file formats: .nnu (updated NANU), .ale (new ESHS), .blm (new YUMA), .bl3 (new SEM), .oa1 (updated OA) , and .as2.txt (new A-S Status) handle a larger number of SVNs and/or PRNs and more clearly specify zero padding and whitespace so automated parsing can be done with less assumptions.</p>	<p>The new or modified file formats: .nnu (updated NANU), .ale (new ESHS), .blm (new YUMA), .bl3 (new SEM), and .oa1 (updated OA) , and .as2.txt (new A-S Status) handle a larger number of SVNs and/or PRNs and more clearly specify zero padding and whitespace so automated parsing can be done with less assumptions.</p>

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	3.1			Section 3.1 - Replace old Figure 1 and add wording that accompanies new Figure 1 interface definition Sections 3.2.5, 3.2.6 & 3.2.7 - the CS provides the files to a TBD Web Server for further distribution	Exclude Civil interfaces from the CS2448 requirement: "Connection to the CS from external interfaces shall be authenticated using the DoD Public Key Infrastructure (PKI)..." SE&I OCX IPT directed us NOT to modify the CS 800 spec, but to work with Raytheon to find an implementation solution that meets both the CS 800 spec and the Civil Users needs. Also, per GPEA's request change language in the ICD from the CS distributes the files to the CS provides the files to a Web Server for further distribution
Post ERB Action Items					
	Title Page, Section 1.3		Department of Homeland Security (DHS), United States Coast Guard (USCG)	Department of Homeland Security (DHS), United States Coast Guard (USCG), Navigation Center (NAVCEN)	Per the NAVCEN's request (Rick Hamilton). Document signature will come from the NAVCEN Office
	Section 1.1 & 2.1			MFR June 30, 2011 Department of the Air Force, 50th Space Wing (AFSPC) Memorandum for Record - 2 SOPS GPS Public Release Policy	Per GPEA's request and GP ERB action item, the 50SW/PA wrote a clarification memo to make all of the files in ICD 870 publicly releasable. We are referencing this MFR in the ICD
	Section 3.1, Figure 1		In OCX Block I, there will be an air gap between the GPS CS and the Web Server interface	In OCX Block I, there will be an air gap between the GPS CS and the NIPRNet Web Server interface The SIPRNet/NIPRNet servers are to be provided by the Government vice OCX	Per GP ERB action item, Figure 1 has been updated to reflect Raytheon's support for this interface

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	Appendix 1 - NANU data formats		CIVIL AVIATION - TBD	CIVIL AVIATION - FAA National Operations Control Center	DOT FAA, Hank Skalski, submitted the civil aviation POC information - FAA National Operations Control Center. Replace TBD with this information