

**FRENCH REPORT to ISO/TC20/SC13**  
**submitted by CNES on behalf of AFNOR**  
**Sao Jose dos Campos, INPE, April 2016**

**1 – MANAGEMENT:**

1-1 ORGANIZATION

In CNES, Mr Duquesne becomes the Director in charge of Standardization. His Directorate is “Programmes, International Affairs and Quality”.

1-2 AREA OF AGENCY INVOLVEMENT

Global, for category A missions.

1-3 MANPOWER ALLOTTED TO TC-20/SC-13

Tentatively maintained to 0.1 man x year on the SC-13 specifics.

In the order of 4 to 5 FTE in the CCSDS activities.

**2 – IMPLEMENTATION ACTIVITIES**

2-1 SPACECRAFT UTILIZING SC13 STANDARDS FOR TLM / CMD

All CNES satellites make use of CCSDS / SC13 standards, at least partially.

The new satellite product lines, ISIS and Myriade Evolution, will be compliant with the Space Link and the Space Link Extension standards. All future CNES projects will be SLE compliant on the user side.

2-2 GROUND FACILITIES UTILIZING SC-13 STANDARDS

Implementation of CCSDS / SC13 standards (RF&Modulation, Packet TM&TC, OPM, SLE transfer services) is qualified in all CNES Ground Stations. The provider side is fully available from CNES Networks.

The generic ground segment which is part of both the ISIS and the Myriade Evolution product lines is progressing in development phases, confirming SLE and embarking on Mission Operations core standards. From its availability for future missions will comply to CCSDS / SC13 standards on the user side.

**3 – DOCUMENTATION ACTIVITIES**

3-1 ADOPTION OF SC13 STANDARDS AT FRANCE NATIONAL LEVEL

Ballots completed since SC-13 (informal) meeting in Darmstadt (Fall 2015):

Reference	Title	Status	Date of Response	Response	CCSDS Reference
ISO 10537	Space data and information transfer systems -- Encapsulation service	Systematic review	08/12/15	Revision	CCSDS 133.1-B-1.
ISO 10537	Space data and information transfer systems -- Encapsulation service (visant à incorporer les modifications issues du document	Révision	04/03/16	Approval	CCSDS 133.1-B-2

	CCSDS 133.1-B-2)				
<b>ISO 13527</b>	Space data and information transfer systems -- XML formatted data unit (XFDU) structure and construction rules	Systematic review	08/12/15	Confirmation	<b>CCSDS 661.0-B-1</b>
<b>ISO 13537</b>	Space data and information transfer systems -- Reference architecture for space data systems	Systematic review	08/12/15	Confirmation	<b>CCSDS 311.0-M-1.</b>
<b>ISO 13541</b>	Space data and information transfer systems -- Attitude data messages	Systematic review	08/12/15	Confirmation	<b>CCSDS 504.0-B-1.</b>
<b>ISO 15893</b>	Space data and information transfer systems -- Space communications protocol specification (SCPS) -- Transport protocol (SCPS-TP)	Systematic review	08/12/15	Confirmation	<b>CCSDS 714.0-B-2.</b>
<b>ISO 15396</b>	Space data and information transfer systems – Cross support reference model – Space link extension services	Systematic review	08/12/15	Confirmation	<b>CCSDS 910.4-B-2</b>
<b>ISO 22647</b>	Space data and information transfer systems -- Space link identifiers	Systematic review	08/12/15	Retirement	<b>CCSDS 135.0-B-3</b>
<b>ISO 21082</b>	Mission operations –Mal space packet transport binding and binary encoding	DIS	02/03/16	Approval	<b>CCSDS 524.1-B-1</b>
<b>ISO 21076</b>	Space data and information transfer systems – Space communications cross support – Architecture requirements document	DIS	02/03/16	Approval	<b>CCSDS 901.1-M-1</b>
<b>ISO 21080</b>	Space data and information transfer systems – Licklider transmission protocol (LTP) for CCSDS	DIS	02/03/16	Approval	<b>CCSDS 734.1-B-1</b>
<b>ISO 21077</b>	Space data and information transfer systems – Digital motion imagery	DIS	02/03/16	Approval	<b>CCSDS 766.1.B-1</b>

In progress :

<b>ISO Reference</b>	<b>Title</b>	<b>Status</b>	<b>Expected response</b>	<b>CCSDS Reference</b>
<b>ISO DIS 18440 (Ed.2)</b>	Space Link Extension -- Internet Protocol for Transfer Services	DIS	22/06/16	<b>CCSDS 913.1-B-2</b>
<b>ISO/DIS 18441 (Ed 2)</b>	Space data and information transfer systems -- Space link extension -- Application program interface for transfer services -- Core specification	DIS	22/06/16	<b>CCSDS 914.0-M-2</b>

<b>ISO/DIS 18442 (Ed 2)</b>	Space data and information transfer systems -- Space link extension -- Application program interface for return all frames service	DIS	22/06/16	<b>CCSDS 915.1-M-2</b>
<b>ISO/DIS 18443 (Ed 2)</b>	Space data and information transfer systems -- Space link extension -- Application program interface for return channel frames service	DIS	22/06/16	<b>CCSDS 915.2-M-2</b>
<b>ISO/DIS 18444 (Ed 2)</b>	Space data and information transfer systems -- Space link extension -- Application program interface for return operational control fields service	DIS	22/06/16	<b>CCSDS 915.5-M-2</b>
<b>ISO/DIS 18445 (Ed 2)</b>	Space data and information transfer systems -- Space link extension -- Application program interface for the forward CLTU service	DIS	22/06/16	<b>CCSDS 916.1-M-2</b>
<b>ISO/DIS 18446 (Ed 2)</b>	Space data and information transfer systems -- Space link extension -- Application program interface for the forward space packet service	DIS	22/06/16	<b>CCSDS 916.3-M-2</b>
<b>ISO/DIS 22645 (Ed 2)</b>	Space data and information transfer systems -- TM (telemetry) space data link protocol	DIS	22/06/16	<b>CCSDS 132.0-B-2</b>
<b>ISO/DIS 22664 (Ed 2)</b>	Space data and information transfer systems -- TC (telecommand) space data link protocol	DIS	22/06/16	<b>CCSDS 232.0-B-3</b>
<b>ISO/DIS 22666 (Ed 2)</b>	Space data and information transfer systems -- AOS (advanced orbiting systems) space data link protocol	DIS	22/06/16	<b>CCSDS 732.0-B-3</b>

### 3-2 TRANSLATIONS

None in the period

## **4 – MISCELLANEOUS**

### 4-1 Documents

No report.

### 4-2 Liaisons

No report.

### 4-3 Other

France expresses his warmest thanks to NASA for hosting and supporting the Spring 2016 Working Groups meetings in Cleveland.

France expresses his warmest thanks to INPE for hosting and supporting the Spring 2016 Management / ISO-TC20-SC13 meetings.

Respectfully submitted: **Jean-Marc Soula, CNES, French Representative to ISO-TC20-SC13 on behalf of AFNOR - BNAE.**