REVIEW ITEM DISPOSITION (RID):
RED BOOK RID INITIATION FORM – RIDs by DLR on 20201217

AGENCY RID NUMBER: DLR-01
SUBMITTING ORGANIZATION: DLR, IKN-OP

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DOCUMENT NUMBER: CCSDS 141.0-P-1.1 Pink Sheets, Issue 1.2
DOCUMENT NAME: Optical Communications Physical Layer
FILE NAME: "141x0p11_final_clean+RID-resolutions-v2.doc"
DATE ISSUED: 08 December 2020
PAGE NUMBER: 6-1 PARAGRAPH NUMBER: 6.1
RID SHORT TITLE: **Overview-Text**

DESCRIPTION OF REQUESTED CHANGE:

FROM:

When data transmission accompanies the on-off-keying beacon signal, the Coding and Synchronization sublayer produces a binary vector that is to be modulated by the absence (0) or presence (1) of a pulse in the slot by the transmitter at the Physical Layer. The physical characteristics of these transmitted pulses are described below. At the receiver, the Physical Layer demodulates the data and delivers statistics to the Coding and Synchronization sublayer for its use in decoding.

TO:

When a beacon is provided from the counter terminal to the satellite terminal to enable more precise pointing, this beacon signal can be pulsed to better discern its position from background-light offset. Different frequencies are defined for such a beacon signal here.

CATEGORY OF REQUESTED CHANGE:
Technical Fact ___ Recommended ___ Editorial _X_

SUPPORTING ANALYSIS / Explanation for RID:

Text must fit to summarize the subsequent beacon proceeding, it but seems to have been a copy from HPE-part which is not applicable

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DISPOSITION:

AGENCY RID NUMBER: DLR-02
SUBMITTING ORGANIZATION: DLR, IKN-OP

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DOCUMENT NAME: Optical Communications Physical Layer
FILE NAME: "141x0p11_final_clean+RID-resolutions-v2.doc"
DATE ISSUED: 08 December 2020
PAGE NUMBER: 6-1 PARAGRAPH NUMBER: 6.4
RID SHORT TITLE: **minimum laser linewidth at beacon option d)**

DESCRIPTION OF REQUESTED CHANGE:

FROM:

The laser linewidth, measured as full width at half maximum over a time scale of 100 ms, shall not exceed ±50 GHz for uplink center frequency options a) and b), shall not exceed ±66 GHz for option c), and shall not exceed ±300 GHz for option d).

TO:

The laser linewidth, measured as full width at half maximum over a time scale of 100 ms, shall not exceed ±50 GHz for uplink center frequency options a) and b), shall not exceed ±66 GHz for option c), and shall be in the range from ±50 GHz to ±300 GHz for option d).

CATEGORY OF REQUESTED CHANGE:
Technical Fact ___ Recommended _X_ Editorial ___

SUPPORTING ANALYSIS / Explanation for RID:

Molecular absorption lines of atmospheric molecules (typical 5GHz wide) can attenuate specific frequencies around 808nm if the laser linewidth is too small

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DISPOSITION:

AGENCY RID NUMBER: DLR-03
SUBMITTING ORGANIZATION: DLR, IKN-OP

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DOCUMENT NAME: Optical Communications Physical Layer
FILE NAME: "141x0p11_final_clean+RID-resolutions-v2.doc"
DATE ISSUED: 08 December 2020
PAGE NUMBER: 6-1 PARAGRAPH NUMBER: 6.5
RID SHORT TITLE: **Widen Spillover Emission Spectrum individually**

DESCRIPTION OF REQUESTED CHANGE:

FROM:

The laser shall transmit 95 percent of its energy within ±100 GHz of its center frequency.

TO:

The laser shall transmit 95 percent of its energy within ±100 GHz of its center frequency for options a) and b), and ±198.3 GHz for option c) and ±1218 GHz for option d)

CATEGORY OF REQUESTED CHANGE:
Technical Fact _X_ Recommended ___ Editorial ___

SUPPORTING ANALYSIS / Explanation for RID:

Spillover Emission is sum of 6.3 and 6.4

DISPOSITION:

AGENCY RID NUMBER: DLR-04
SUBMITTING ORGANIZATION: DLR, IKN-OP

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DOCUMENT NUMBER: CCSDS 141.0-P-1.1 Pink Sheets, Issue 1.2
DOCUMENT NAME: Optical Communications Physical Layer
FILE NAME: "141x0p11_final_clean+RID-resolutions-v2.doc"
DATE ISSUED: 08 December 2020
PAGE NUMBER: 6-2 PARAGRAPH NUMBER: 6.6.2.2
RID SHORT TITLE: individual pulse frequencies

DESCRIPTION OF REQUESTED CHANGE:

FROM:

If the beacon signal is modulated, the modulating frequency shall be in the interval of 10 kHz to 10 MHz kHz.

TO:

If the beacon signal is modulated, the modulating frequency shall be in the range of 1 kHz to 100 kHz for option a) and b) and c), and 0 Hz to 10kHz for option d)

CATEGORY OF REQUESTED CHANGE:
Technical Fact ___ Recommended _X_ Editorial ___

SUPPORTING ANALYSIS / Explanation for RID:

Options a) b) c) might need fiber amplifiers that can not run at low pulse rates below 1kHz, while option d) will use high power laser diodes that can run at lower frequencies down to few Hz, but are problematic to modulate at high frequencies.
Data uplink modulation is not included in this PHY book now, if we include it here, we would have to rewrite and agree on major parts of this book.
Also corrected a typo.

DISPOSITION:

AGENCY RID NUMBER: DLR-05
SUBMITTING ORGANIZATION: DLR, IKN-OP

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DOCUMENT NAME: Optical Communications Physical Layer
FILE NAME: "141x0p11_final_clean+RID-resolutions-v2.doc"
DATE ISSUED: 08 December 2020
PAGE NUMBER: 7-1 PARAGRAPH NUMBER: 7.2
RID SHORT TITLE: **adjust_Table_7.2 beacon**

DESCRIPTION OF REQUESTED CHANGE:

FROM:

0 (representing CW), or 10 kHz to 10 MHz

TO:

1 kHz to 100 kHz for options a) b) c), or 0 Hz (representing CW) to 10 kHz for option d)

CATEGORY OF REQUESTED CHANGE:
Technical Fact ___ Recommended ___ Editorial _X_

SUPPORTING ANALYSIS / Explanation for RID:

Adjusting this table to the text before

DISPOSITION:

AGENCY RID NUMBER: DLR-06
SUBMITTING ORGANIZATION: DLR, IKN-OP

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DOCUMENT NUMBER: CCSDS 141.0-P-1.1 Pink Sheets, Issue 1.2
DOCUMENT NAME: Optical Communications Physical Layer
FILE NAME: "141x0p11_final_clean+RID-resolutions-v2.doc"
DATE ISSUED: 08 December 2020
PAGE NUMBER: A-7 PARAGRAPH NUMBER: A2.1.5
RID SHORT TITLE: adjust_Table_in_paragraph_A2.1.5

DESCRIPTION OF REQUESTED CHANGE:

FROM:

O3K -2	Center frequency tolerance	6.3	M	±50 GHz for option a) and b) ±132.3 GHz for option c)	
O3K -3	Laser linewidth	6.4	M	±50 GHz for option a) and b) ±66 GHz for option c)	
O3K -4	In-band and spillover emissions	6.5	M	95% within ±50 GHz	
O3K -5.1	Modulation	6.6.1	M	Unmodulated or OOK	
O3K-5.2	Beacon Pulse Repetition Rate	6.6.2	M	0 (representing CW) or 10 kHz to 10 MHz.	

TO:

O3K -2	Center frequency tolerance	6.3	M	±50 GHz for option a) and b) ±132.3 GHz for option c) ±918 GHz for option d)	
O3K -3	Laser linewidth	6.4	M	±50 GHz for option a) and b) ±66 GHz for option c) ±50 GHz to ±300 GHz for option d)	
O3K -4	In-band and spillover emissions	6.5	M	95% within ±100 GHz for options a) and b), ±198.3 GHz for option c) ±1218 GHz for option d)	
O3K -5.1	Modulation	6.6.1	M	Unmodulated or OOK	
O3K-5.2	Beacon Pulse Repetition Rate	6.6.2	M	1 kHz to 100 kHz for options a) b) c) and 0 Hz to 10 kHz for option d)	

CATEGORY OF REQUESTED CHANGE:

Technical Fact ___ Recommended ___ Editorial __X_

SUPPORTING ANALYSIS / Explanation for RID:

Adjusting table to the text before

DISPOSITION: