

# Comments on ECC Deliverable “Draft revision of ERC Decision (99)06 - annexes 1 and 2”

## 1 Sources

**Administration/Company/Entity:** CRAF  
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## 2 General Comments

[Please provide here any general comments which do not contain specific change proposals or which are not related to specific sections of the deliverable. Please leave blank if not applicable]

## 3 Proposals related to the ECC Deliverables

**Note:** Contributors shall use the following table to provide comments. It is also encouraged to provide as an annex a separate document showing the proposals with track changes. Minor editorial corrections do not need to be recorded in the table. The table is used in the resolution meeting to record how each proposal is addressed.

*The following information must be included.*

- **Comment number:** Sequential numbering of comments in the format “XX/1”, “XX/2” etc, where “XX” is the organisation name or a suitable abbreviation. Administrations may use CEPT country codes
- **Section number/Clause:** Relevant section number of the deliverable, use numbers where applicable e.g. “1.1”, “A1.4”, “List of abbreviations”
- **Paragraph/Figure/Table:** Paragraph number in section, e.g. “1”, “2” .. or Figure/Table, e.g. “Figure 1”, “Table 2”
- **Type of comment:** “General”, “Technical” or “Editorial” depending on the nature of the proposed changes
- **Comment:** Background/justification for proposed changes
- **Proposed change:** Proposed modifications shown in revision marks where possible. For more complicated changes (e.g. proposed deletion/addition of whole sections) or changes to tables it is sufficient to refer to the annex including the changes

Comment number	Section number Clause	Paragraph Figure Table	Type of comment (General, Technical or Editorial)	Comment	Proposed change																												
CRAF/1	Annex 2	Table : Operational Constraints - ARGOS	Technical, Editorial	<p>The inter-services studies for ARGOS systems have been completed by SE40, approved and endorsed by WGSE under certain operational constraints. During FM44#60 meeting, the row "Technique to avoid causing interferences from the downlink emissions" has been removed from the table of operational constraints in Annex 2.</p> <p>Removing the row totally from the table shall impact the outcome of studies and discussions as agreed at SE40. The design of built-in filters to limit spurious emissions to certain levels is considered a technique to avoid causing interference to the radio astronomy service. Its worth highlighting that the data loss from ARGOS downlink system was estimated in the range of 1.44% (ECC report 322, Table 37). More details on the technical constraints of ARGOS can be found in the S-PCS report 322 sections 2.3.3 and 2.3.4</p> <p>The technical operational constraints should be retained as received from WGSE, the responsible working group for specifying technical operational constraints. In case the text received from WGSE was not clear enough, an alternative text is proposed to accurately capture the agreed outcomes.</p>	<table border="1"> <thead> <tr> <th colspan="2" data-bbox="1442 352 2033 384">SYSTEM NAME : ARGOS</th> </tr> <tr> <th colspan="2" data-bbox="1442 384 2033 411">OPERATIONAL CONSTRAINTS</th> </tr> </thead> <tbody> <tr> <td data-bbox="1442 411 1655 459">Up-link designated bands</td> <td data-bbox="1655 411 2033 459">399.9-400.05 MHz</td> </tr> <tr> <td data-bbox="1442 459 1655 507">Down-link designated bands</td> <td data-bbox="1655 459 2033 507">400.15-401 MHz</td> </tr> <tr> <td data-bbox="1442 507 1655 563">Multiple access method</td> <td data-bbox="1655 507 2033 563">Uplink CDMA and FDMA Downlink: FDMA</td> </tr> <tr> <td data-bbox="1442 563 1655 643">Modulation method</td> <td data-bbox="1655 563 2033 643">Uplink: spread spectrum (120 kHz) and narrow-band (PSK, 4 kHz) Downlink: narrow band (PSK, 4 kHz)</td> </tr> <tr> <td data-bbox="1442 643 1655 667">Downlink e.i.r.p</td> <td data-bbox="1655 643 2033 667">7.2 dBW</td> </tr> <tr> <td data-bbox="1442 667 1655 691">Downlink duty cycle</td> <td data-bbox="1655 667 2033 691">100%</td> </tr> <tr> <td data-bbox="1442 691 1655 890">Technique to avoid causing interferences from the downlink emissions</td> <td data-bbox="1655 691 2033 890">ARGOS downlink transmitters design to filter spurious emissions to a maximum level of -80 dBm in any 1 kHz bandwidth within the band 406.1-410 MHz shall ensure compliance with the 2% data loss criteria for RAS observations in accordance with Recommendations ITU-R RA.769-2 and ITU-R RA.1513.</td> </tr> <tr> <td data-bbox="1442 890 1655 970">Maximum MESS e.i.r.p. spectral density</td> <td data-bbox="1655 890 2033 970">Maximum beacon e.i.r.p. level shall not exceed 5 dBW in the 399.9-400.05 MHz band.</td> </tr> <tr> <td data-bbox="1442 970 1655 1042">Technique to avoid causing interference from MESS</td> <td data-bbox="1655 970 2033 1042">The MES shall transmit only when the satellite is visible.</td> </tr> <tr> <td data-bbox="1442 1042 1655 1121">Maximum burst duration for MESS transmission</td> <td data-bbox="1655 1042 2033 1121">1 second</td> </tr> <tr> <td data-bbox="1442 1121 1655 1169">Minimum time between bursts</td> <td data-bbox="1655 1121 2033 1169">30s</td> </tr> <tr> <td data-bbox="1442 1169 1655 1225">Maximum duty cycle per MESS</td> <td data-bbox="1655 1169 2033 1225">0.3% (over 15 min), typically 0.01%</td> </tr> </tbody> </table>	SYSTEM NAME : ARGOS		OPERATIONAL CONSTRAINTS		Up-link designated bands	399.9-400.05 MHz	Down-link designated bands	400.15-401 MHz	Multiple access method	Uplink CDMA and FDMA Downlink: FDMA	Modulation method	Uplink: spread spectrum (120 kHz) and narrow-band (PSK, 4 kHz) Downlink: narrow band (PSK, 4 kHz)	Downlink e.i.r.p	7.2 dBW	Downlink duty cycle	100%	Technique to avoid causing interferences from the downlink emissions	ARGOS downlink transmitters design to filter spurious emissions to a maximum level of -80 dBm in any 1 kHz bandwidth within the band 406.1-410 MHz shall ensure compliance with the 2% data loss criteria for RAS observations in accordance with Recommendations ITU-R RA.769-2 and ITU-R RA.1513.	Maximum MESS e.i.r.p. spectral density	Maximum beacon e.i.r.p. level shall not exceed 5 dBW in the 399.9-400.05 MHz band.	Technique to avoid causing interference from MESS	The MES shall transmit only when the satellite is visible.	Maximum burst duration for MESS transmission	1 second	Minimum time between bursts	30s	Maximum duty cycle per MESS	0.3% (over 15 min), typically 0.01%
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