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Sent:	31 January 2003 14:17
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Subject:	Peak up mode - data exchange format

Mac Word 3.0

You will find attached a proposition for the telecommande associated to the
peak-up mode, to require the satellite to performe the attitude correction
This will be used to update the IID-A section 5.12.5.
The peak up mode applies to SPIRE and HIFI only (not required by PACS, but sent
also to PACS for information)

The proposed format to describe the rotation requested to recenter the
spacecraft is a quaternion.
q=(s,V), s=Cos(Theta/2), V=U.Sin(Theta/2), U=oriented rotation vector
(normalised), Theta= rotation to be performed

Would you agree with this format.
We need also to clarify when peak up needs to be performed (once per instrument
usage, once per observation, once upon a time,...)

(See attached file: Peak-up.doc)

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ALCATEL SPACE

Herschel – Perform peak-up TC(8,4)

The peak-up command serves to make instrument calculated adjustments to fine pointings contained in the Mission TimeLine. It is used only in SCM to make small change (typically some arcsecs) of the spacecraft attitude without a slew to the required target attitude and maintain that attitude until the next command arrives.

Telecommand summary

Description	Perform peak-up
Type, subtype	8,4
Data length	Fixed: 10 words

Telecommand structure

Function ID	Activity ID	Structure ID	$q_{peak-up}$
Enumerated 8 bits	Enumerated 8 bits	Enumerated 16 bits	Real 4*32 bits

Telecommand application data

- **Function ID :** TBD
- **Activity ID :** TBD
- **Structure ID :** TBD
- q_{peakup} : Peak-up correction quaternion, expressed as TBD

Telecommand execution

The commanded peak-up correction shall only affect the next SCM fine pointing command.
If the next command is not a SCM fine pointing command, then the peak-up command shall be discarded and an event report TM(5,1) shall be generated.

The boundaries for the peak-up command are specified by database parameters (with the default value of 10 arcsec about both Y and Z axes of ACMS frame).