CENTRE NATIONAL D'ÉTUDES SPATIALES

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INFORMATION NOTE

FIRST EUROPEAN WORKSHOP ON END-OF-LIFE DISPOSAL OF GEOSTATIONARY SATELLITES

25 January, CNES hosted a meeting at European level between space agencies and the main satellite operators and manufacturers on end-of-life disposal of satellites in geostationary orbit (800 km). Human activities in space have generated a large amount of orbital debris, made up of dead spacecraft, spent launcher stages and miscellaneous other fragments. This debris poses a collision risk for operating satellites that needs to be taken seriously. Especially in geostationary orbit, debris mitigation measures are recommended by space agencies and already applied voluntarily by certain satellite operators.

The workshop was attended by 50 participants from national space agencies (ASI, BNSC, CNES, DLR and ESA), government departments (ministries of research and defence) and leading satellite operators and manufacturers (Alcatel Alenia Space, Arianespace, EADS Astrium, Eumetsat, Eutelsat, France Telecom, Hispasat, Inmarsat, Newskies, Qinetiq, SES Astra and SSTL).

Threefold objective

- review status of discussions underway at the United Nations and the Inter Agency Space Debris Coordination Committee (IADC) to establish an international consensus on debris mitigation measures;

- present available documents, in particular the European Code of Conduct on space debris;

- review end-of-life disposal operations already accomplished by certain operators in order to identify implementation obstacles and make any necessary regulatory changes.

A clear success

- agencies informed operators about regulations currently in development and demonstrated the coherent approach being pursued through the IADC;

- operators demonstrated they have already begun to adapt to end-of-life regulations;

- implementation obstacles were identified and will serve as a basis to define new studies to be undertaken by space agencies, for example through the IADC, to:
    - improve estimation of quantities of residual propellant in spacecraft tanks
    - specify the terms of the IADC formula used to calculate end-of-life reorbiting altitude
    - specify the probability of success for such operations
    - define final orbit eccentricity constraints
    - define acceptable residual pressure levels after passivation

With such a broad range of topics covered, this first European workshop was a clear success.

CNES has executed end-of-life operations of this kind on six occasions in recent years, including twice for France Telecom and the French defence procurement agency DGA, with support from EADS Astrium, on Telecom 2B in June 2004 and Telecom 2A in October 2005.

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