

Commercial and Foreign Entities (CFE) Pilot Program Status Update and Way Ahead

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The President of the United States has designated Commander of United States Strategic Command (USSTRATCOM) as the Department of Defense (DoD) lead for execution and administration of Commercial and Foreign Entities (CFE) activities. Commander, USSTRATCOM has delegated the task of designing the CFE program, whose ultimate goal is to ensure safe flight of on-orbit objects, to the Commander of Air Force Space Command (AFSPC). Air Force Space Command (AFSPC), in conjunction with USSTRATCOM, is in the final phase of the CFE Pilot Program, an effort which aims both to define United States (U.S.) support to CFE and to transfer daily management of CFE activities from AFSPC to USSTRATCOM on or about 1 October 2009.

The overarching goal of the CFE effort is to engage the U.S. on the world stage to encourage international cooperation and transparency with foreign nations and/or consortia on space activities that are of mutual benefit. In other words, the U.S. will provide space situational awareness (SSA) information to CFE mission partners in order to protect manned spaceflight, prevent on orbit collisions, and minimize the debris field surrounding the Earth. It is in the best interests of all space-faring nations and consortia to protect the assets they have on orbit; the CFE program is designed to provide U.S.-generated data to help accomplish that goal.

The U.S. routinely tracks and catalogs on orbit objects in order to ensure safe operations of manned spaceflight and daily satellite activities. Awareness of where on orbit objects are in relation to each other is information vital to that end. Correspondingly, sharing U.S. information with CFE mission partners is vital to that same end. The U.S. wants to establish and grow a cooperative relationship with CFE partners to keep the space environment safe and as free of debris as possible.

To facilitate this, AFSPC has instituted a process whereby interested agencies contact the AFSPC Space Situational Awareness, Command and Control Operations, and Integration Branch (A3C) and request access to the CFE SSA website (currently www.space-track.org). This website affords publically-available, general orbital information to registered CFE mission partners. That information includes:

- General perturbation two-line element (TLE) sets
- Re-entry predictions
- 60-day decay list
- Satellite situation reports

Additional types of data products are available to authorized CFE mission partners with current, approved agreements and support requests, to include:

- Basic launch support
- Basic conjunction assessment (CA) resolution
- Basic end-of-life/re-entry support
- Basic anomaly resolution support
- Potential threat notification support

This functionality will transfer to USSTRATCOM when they assume daily management of CFE activities from AFSPC.

To garner information beyond that available on the website, users can submit Requests for Space Support (to the same division in HQ AFSPC currently managing the Space-Track.org website) via email. AFSPC/A3C will process the request in conjunction with the Joint Space Operations Center (JSpOC). If the requesting agency has an agreement with AFSPC, AFSPC will provide SSA information. Even if the requesting agency has no pre-existing agreement with AFSPC, AFSPC will assist that agency if doing so will prevent on-orbit collisions or will otherwise enhance the flight safety of on-orbit assets, including all manned spacecraft from any country.

Currently, there are over 39,000 user accounts on Space-Track.org, representing 110 countries. USSTRATCOM and AFSPC hope to grow this number as the CFE effort expands. USSTRATCOM and AFSPC fervently hope to team with commercial and international consortia to build upon their current efforts, ultimately leading to an era of

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unprecedented international cooperation to keep space safe for manned spaceflight, satellite operations, and scientific research.

The following chronology delineates the evolution of SSA support to CFE mission partners:

- 1958. The USG provided SSA information (TLE, Satellite Catalog (SATCAT), satellite decay, etc.) to National Aeronautics and Space Administration (NASA). Using the authority of the Space Act of 1958, NASA began providing that information to CFE mission partner via the US Mail.
- Early 1990's. NASA Goddard Space Flight Center (GSFC) developed the Orbital Information Group (OIG) website providing a means for registered CFE mission partner to download TLE, SATCAT, and satellite decay messages.
- 10 January 2000. A Deputy Secretary of Defense (DEPSECDEF) action memo directed the services to investigate and assess the means to provide SSA services to CFE mission partners.
- 31 March 2000. The Secretary of the Air Force (SECAF) commissioned the SSA Task Force (SSATF) to investigate CFE mission partner options. SECAF/General Council (GC) and HQ AFSPC/Legal Office determined new legislation is required for DoD to expend Title 10 funds on CFE support.
- 31 October 2000. An Assistant Secretary of Defense (ASD)/Command, Control, Communications, and Intelligence (C3I) memo tasked the Joint Staff, in coordination with United States Space Command (USSPACECOM) and the Assistant Secretary of the Air Force (Space), to perform an option analysis and provide a final recommendation. The panel recommended NASA continue to provide support to CFE mission partners; AFSPC non-concurred with this approach.
- 26 March 2002. The ASD/C3I issued a memorandum tasking the Air Force to provide a fully coordinated recommendation regarding the CFE pilot program.
- 27 August 2002. The AFSPC Vice Commander approved a Federally Funded Research and Development Company (FFRDC) implementation briefing in response to the ASD/C3I tasking.
- August 2002. AFSPC submitted new legislation to resolve the Title 10 issue for consideration in the Fiscal Year 2004 (FY04) National Defense Authorization Act (NDAA). Changes were made to the Congressional language during interagency coordination with SECAF, the Office of the Secretary of Defense (OSD), and the Office of Management and Budget (OMB). These changes included instituting a pilot program with a three-year period of performance.
- 8 October 2002. In response to the ASD/C3I tasking, SECAF released a memorandum to ASD/C3I detailing a legislative proposal submitted to Congress which, if enacted, would allow the Air Force to implement a CFE pilot program.
- 24 November 2003. The 2004 NDAA (Public Law 108-136) amended Chapter 135 of Title 10, United States Code to authorize implementation of a CFE SSA pilot program for a three-year period.
- 18 October 2004. The Secretary of Defense delegated authority and responsibility to SECAF for implementation of the CFE pilot program.
- 8 November 2004. The SECAF delegated authority and responsibility to Commander, AFSPC for implementation of the CFE pilot program.
- 21 December 2004. Commander, AFSPC delegated the implementation of the CFE pilot program to the AFSPC/A3.
- 3 January 2005. The AFSPC CFE pilot program website (www.Space-Track.org) began providing SSA data to CFE mission partners with the NASA OIG website in shadow configuration. Full replication and functionality of the NASA OIG website achieved.
- 7 March 2005. The NASA OIG website experienced significant degradation and was terminated at the direction of the AFSPC Commander. The space-track.org website began single-string operations.
- 7 March 2005. Commander, AFSPC authorized redistribution of TLE and analysis products to worldwide satellite owners.

- 17 October 2006. The NDAA (Public Law 109-364) amended Section 2274(i) of Title 10, USC to extend the CFE pilot program until 30 September 2009.
- 22 December 2008. AFSPC/A3 sent a memorandum to 14 AF/A3 outlining the policy and process to enable 614 AOC to maintain current levels of SSA support to authorized CFE mission partners. This memo states CFE mission partners must enter into an agreement with HQ AFSPC/A3C prior to submitting a request for SSA support.
- October 2009. CFE program operations transfer from Headquarters (HQ), AFSPC to HQ, USSTRATCOM. HQ AFSPC assumes its traditional organize, train, and equip role, while HQ USSTRATCOM assumes control of daily CFE operations.