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|  | **SPACE FENCE CONJUNCTION ASSESSMENT INTEGRATION PLAN** |

## About Space Fence

The Space Fence, located at Kwajalein Atoll, Marshall Islands, is a large-aperture phased-array/fence radar which will be integrated into USSPACECOM’s space surveillance network (SSN) to support their space surveillance mission. It’s designed to track objects as small as five centimeters in low-earth orbit. In development since 2014, the Space Fence is expected to become operational in early 2020. The 18th Space Control Squadron (18 SPCS) will be the primary recipient of data from the Space Fence, which it will integrate into all space domain awareness (SDA) processes, to include conjunction assessment and collision avoidance. The 18 SPCS, in coordination with NASA, began trialing this data 25 Nov., 2019. The data is expected to increase the size of the space catalog as well as improve the accuracy of the current catalog.

## Trial Period

Before the Space Fence is approved for routine operational use, it is undergoing a Trial Period, where data will be sent to 18 SPCS and NASA for testing, evaluation, and deliberate integration into live processes as appropriate. There is no defined timeframe for Trial Period; it will last as long as needed to confirm data quality, consistency, and integrity. During this time, data will be integrated into conjunction assessment processes and products according to the following phases. **Phase 2, 3, and 4 will be preceded by an announcement to satellite operators via email and Space-Track.org.**

*Space Fence CA Data Phase 1: Catalog Stabilization*

* This phase will allow initial evaluation of the data on 18 SPCS’ live mission system, and include creation of new space objects, data quality analysis, sensor calibration, and trial of all major processes.
* No Space Fence data will be shared with external users during this phase.
* Once 18 SPCS and NASA are confident in the stability of the data, catalog and processes, they will move to Phase 2.

*Space Fence CA Data Phase 2: Space Fence “Test Size” to Exercise External Systems*

* 18 SPCS and NASA will add a small number of Space Fence-only objects to CA screenings and share results with satellite operators.
* CDMs may contain secondaries in the 800000000 range.
  + Objects within this range are only tracked by the Space Fence, so there may be large covariances.
  + Example CDMs are available on Space-Track: <https://www.space-track.org/operator#/help>
* Satellite operators may send feedback to [18SPCS.doo.customerservice@us.af.mil](mailto:18SPCS.doo.customerservice@us.af.mil)

*Space Fence CA Data Phase 3: Initial Portion of Space Fence Catalog*

* 18 SPCS and NASA will add the first significant number of Space Fence-only objects to CA screenings and share results with satellite operators.
* CA results will be evaluated for data quality and metrics.
* Feedback from satellite operators will be extremely helpful.

*Space Fence CA Data Phase 4: Subsequent/Final Portions of Space Fence Catalog*

* Additional portions of Space Fence-only data will be added, following the protocol for Phase 3.
* Analysis of results will continue:
  + Covariance realism
  + Other data quality indices
  + CA serious event rates

## Routine Operations

Upon successful Trial Period, the Space Fence will become a routine contributor to the US Space Surveillance Network and spaceflight safety processes. 18 SPCS and NASA will continue to provide important updates to the satellite operator community as needed. Thank you for your patience and feedback during this process.