

On 26 November 2001 at 14:57:00 UTC, OMM20 was successfully implemented. The maneuver occurred on orbit number 43479 near the cycle boundary between repeat cycles 338 and 339 (pass number 254). The ideal (after the tweak) and commanded maneuver magnitudes were both 4.20 mm/s. The maneuver increased the semi-major axis by 9.57 meters and reversed the satellite's eastward ground track drift to keep TOPEX within the ± 1 km. control band. At the time of the maneuver, the ground track was around 53 meters east of the reference ground track, having a projected control band exit on about 20 December 2001.

NAVT used the operational orbit determination solutions after the maneuver to estimate an achieved maneuver magnitude of 4.46 mm/s. The achieved maneuver magnitude is 6.19 % higher than expected. The achieved change in semi-major axis is 9.57 meters compared to the design value of 9.01 meters. Estimates of the maneuver magnitude and change in the semi-major axis rely on the 4-day tracking arc.

Based on the above brief performance evaluation, the ground track is expected to exit the control band around 29 April 2002.

To enhance future maneuver design activities and extend the time between maneuvers, the NAVT recommends a boost strategy during the January fixed yaw periods. The NAVT projects OMM21 around 15 March 2002 depending on the upcoming JASON-1's activities.

Ahmed Salama
Project Element Manager
Navigation and POD
TOPEX/Poseidon