

ILRS SLR Mission Support Request Form

General Information

Satellite Name:	SOHLA-1	Satellite Host Name:	Astro-Technology SOHLA
Primary Technical Contact:	Michiaki Horii	Alternate Technical Contact	Shinichi Nakamura
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Primary Science Contact	Hidekazu Hashimoto	Alternate Science Contact	Keisuke Yoshihara
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MISSION SPECIFICS

SOHLA-1 is a technical demonstration satellite developed by local SMEs (small and medium-sized enterprises) with technical support of Japan Aerospace Exploration Agency (JAXA) and Osaka Prefecture University. The main objective of SOHLA-1 is to acquire and to accumulate various technologies for small satellite development. Another mission of SOHLA-1 is on-orbit demonstration of several new technologies such as the VHF lightning impulse measurement .

Scientific or Engineering Objectives of Mission:

Satellite Laser Ranging (SLR) Role of Mission: SLR will be used for the calibration of GPS-based satellite positioning. The micro GPS receiver used in this mission has been developed by JAXA based on COTS automobile navigation technology.

Anticipated Launch Date: 2008

Expected Mission Duration: 1 year

ANTICIPATED ORBITAL PARAMETERS

Altitude: 666 km
Inclination: 98.06 deg
Eccentricity: 0.001

TRACKING REQUIREMENTS

Tracking Schedule: Start of tracking immediately after separation of S/C from L/V second stage. Tracking information such will be notified to all SLR stations by web and/or SLR-mail. Tracking prediction file (CPF) will be distributed to SLR stations which can get return from SOHLA-1 by E-mail directly.

Spatial Coverage: All over the world.
SOHLA-1 is spinning satellite. Axis of spinning is fixed to inertial reference frame.
Therefore, there is spatial restriction, in which SLR can get laser pulse return.
JAXA will analyze that where the SLR station can make link to SOHLA-1.

Temporal Coverage: All times

Data Accuracy: Centimeter ranging accuracy

OPERATIONS REQUIREMENTS

Mission Coordinator (ILRS, Subnetwork, etc.): SOHLA-1 is spinning satellite. Axis of spinning is fixed to inertial reference frame.
JAXA will contact SLR stations directly, in which SLR station can make link to SOHLA-1.

Priority of SLR for POD: Second, but it will be needed SLR while evaluation of GPS

Source of Acquisition Data: JAXA

Other Sources of POD (GPS, PRARE, Doppler, etc.) GPS

Primary Analysis Center JAXA

Normal Point Time Span (sec) 15 seconds

Subnetworks/Stations Requested to Track Global SLR systems, but stations must be kept tracking role

Data Delivery Time Requirements Daily to CDDIS and/or EDC -Nominal Operation

RETROREFLECTOR ARRAY INFORMATION

Description of Array & Location Prisms are same as Ajisai, which has 42 mm diameter. Laser reflector consists of 12 prisms. Laser reflector has been mounted at one side of spinning satellite (3RPM).

Technical Contact for Array Correction/Center of Mass Shinichi NAKAMURA

Email and/or Phone Number nakamura.shinichi@jaxa.jp +81 29 868 2625

Other Comments: More detailed information are shown in the SOHLA-1 SLR Tracking Standards. This document will be distributed to SLR station as soon as possible.