

SPACE DEBRIS SYMPOSIUM (A6)
Measurements (1)

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A STANDARD PROPOSAL FOR A TELESCOPE COMMANDING AND SCHEDULING DATA
EXCHANGE FORMAT**Abstract**

Especially in the fields of space debris and Near-Earth Object (NEO) observation, organizations commonly make use of different telescopes, operated by different organizations, in order to obtain a good sky coverage for surveys and flexibility for follow-up observations. Similarly, astronomers regularly use different telescopes to fulfil different scientific requirements, or bluntly due to availability. The NEO and Space Surveillance and Tracking Segments of the European Space Agency's (ESA) Space Situational Awareness (SSA) Programme alone regularly make use of telescopes operated by more than five different organizations. Both routine space debris/NEO observers and scientific astronomers currently face the obstacle of non-standardized interfaces to telescopes or telescope schedulers between different telescope operators. Most operators currently use their own data message format and an encoding of their choice in which users are required to submit commands or requests. Users benefiting from different telescopes thus have to process several different formats, in the worst case converting from one to another if similar observations are carried out on different telescopes. A universal data exchange format would greatly ease the use of different telescopes for astronomers and the inclusion of telescopes into existing space debris/NEO observation systems and programmes. This paper presents a proposal for such a format encoded in XML that was developed within ESA's SSA Programme. It encompasses both direct telescope commands, as used when exclusive control over a telescope is given for certain times, as well as telescope scheduler inputs, as used for many scientific observations where mostly observational requirement intervals are described. In order to ensure recognisability and uniformity across standard formats in similar fields of application, the proposed format follows the structure of similar data exchange formats as recommended by the Consultative Committee for Space Data Systems.