**Proposal Requirements of Near-Earth Asteroid Defense Space Disposal Solution**

**-Subsequent Mission Planning**

1. Design Requirements

For the mid-to-long-term plan during the period of 2025-2035, design 3-5 asteroid defense demonstration and validation missions, and develop a detailed plan that reflects the development of asteroid defense system capabilities. The mission disposal methods should include instantaneous and long-term effects, covering contact, non-contact, and hybrid methods. In principle, the disposal methods for each mission should not be repeated. The overall mission planning should meet the following objectives:

1. Design 1-3 missions before 2030 to ensure accurate disposal of defense targets, with a significant change in target velocity, achieving impact accurately’ and ‘push-off distinctly’. Design 1-3 missions before 2035, considering an integrated space-ground early warning monitoring mechanism, providing multiple disposal methods. This aims to achieve precise prediction of orbit evolution and impact points, efficient deflection, and accurate deviation of NEAs targets at approximately 100 meters, realizing ‘control exquisitely’.

The proposal should consider the expected technological level and engineering capabilities, and provide a detailed analysis based on the following principles:

1. Safety: The selected target, after disposal, should not pose a threat to Earth. Avoiding targets with impact risks listed in NASA/CNEOS/Sentry.
2. Accessibility: The selected target should have a moderate distance relative to Earth, accompanied by an analysis of orbital inclination, eccentricity, demonstrating alignment with the expected technological level and engineering capabilities.
3. Accuracy: Quantitative analysis of disposal effects is required, such as asteroid velocity increments and orbital deflections.
4. Observability: Consider joint space-ground monitoring capabilities, analyzing observation opportunities before, during, and after engineering implementation.
5. Timeliness: The selected targets should align with the launch windows between 2025-2035.

Additionally, the proposal should present an overall plan for long-term asteroid defense, outlining mission schedules, budget estimates, and specifying defense targets, disposal methods, launch windows, mission durations, etc. It should provide a comprehensive plan for coordinated space-ground observations, supporting accurate disposal, effective propulsion, and precise control for each mission.

1. Submission Method and Requirements

Each proposal shall include a design report (mandatory), demonstration video (optional), and model codes (optional). The scoring proportions are 50%, 30%, and 20%, respectively. All files should be placed in a folder named after the team,. The folder should then be compressed into a .zip or .rar format. Specific requirements for each section are as follows:

1. Design Report

A complete design report compiled in PDF should be submitted. The report may include separate chapters, focusing on in-depth analysis of key technologies of interest. Also, adjustments to the report template can be made based on actual circumstances.

1. DemonstrationVideo Present spacecraft orbit transfers, asteroid defense, and disposal processes in the form of animation or video. The video should be as concise and clear as possible, and additional points may be awarded if the video includes text or voice-over explanations.
2. Model Codes

Provide spacecraft models, orbit models, simulation models, source code, etc., developed during the design process. This should support on-orbit demonstration validation and the combination of collision assessment, accompanying correspondent explanatory documentation. Additional points may be awarded for using domestically-developed software.