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Commercial Nano Satellite Constellation's application to Multilateral Arms Control Verification

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Multilateral arms control and disarmament treaties would require, instead of National Technical Means (NTM), International Technical Means (ITM) as verification solution, due to its efficiency and transparency characteristics. With the rapid development of commercial space technology, space based remote sensing and communication technologies are no longer dominated only by a few states or organizations, consequently, they could be utilized by future multilateral arms control and disarmament regime as verification option, like CTBT. Nano satellite constellation, as a new trend of space technology, has raised attention for modular design, easy production, rapid deployment and cost efficiency. This work would explore Nano satellites' potential application to verification infrastructure. A Nano satellite would cost around several million dollars depending on different payload configurations. A constellation of Nano satellites could be produced and launched within a short period of time. A constellation of Nano remote sensing satellites (resolution up to sub-meter level) would achieve continuous monitoring over a certain inspection area. A constellation of Nano communication satellites would achieve in-real-time communication among inspectors in inspection area or providing communication link for IMS stations, which would provide practical support to the mission like OSI and IMS of CTBT in a place of nowhere.

Promotional text

This work would envisage the potential application of commercial Nano satellite constellation to multilateral arms control and disarmament treaties' verification. This would suggest a practical solution to future space based international verification technology.

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