

# FlexHEG Devices to Enable Implementation of AI IntelSat

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## Problem Statement and Background

As part of an international collaboration on governing and equitably benefitting from the positive effects of transformative AI, the IntelSat model requires reliable governance to manage private organizations' involvement. All participating members need secure and reliable mechanisms to monitor each member's fulfillment of their commitments.

AI governance faces a global challenge: while risks and benefits affect everyone, development remains concentrated among few actors with minimal transparency. The IntelSat model, which successfully balanced US technological leadership with meaningful international participation through weighted voting from 1964-2001 in the context of satellite communications technology development, provides a proven template for AI cooperation. Many previous international frameworks have struggled with verification issues. Hardware-enabled governance creates technical guardrails through tamper-evident systems and standardized monitoring at the physical infrastructure level, making an IntelSat-like framework feasible by creating objectively verifiable compliance protocols.

## Proposed Policy Approaches

We propose two complementary policy approaches to accelerate Flexible Hardware Enabled Guarantee (FlexHEG) adoption:

### 1. Treasury Department Tax Credits for FlexHEG Implementation

A targeted tax credit program for companies upgrading existing data centers or building new facilities with FlexHEG-compliant hardware above specified capacity thresholds. These credits would be structured with a sliding scale that rewards early adopters with higher incentives that gradually decrease over a five-year transition period.

#### Actions that would be incentivized:

- Installation of tamper-evident and tamper-responsive secure enclosures for AI accelerators in data centers
- Deployment of compliant network infrastructure enabling secure, authenticated communication between FlexHEG devices

- Conversion of large-scale deployment clusters from standard hardware to FlexHEG-compliant systems

**Key Benefits:** Creates market-driven FlexHEG adoption by aligning commercial interests with security goals without imposing mandates. Offsets capital costs for secure hardware implementation, removing economic barriers to participation. The sliding scale incentive structure drives rapid implementation while establishing a predictable transition period. Works through the tax code rather than creating new regulations, minimizing bureaucratic expansion.

## 2. NSF Technical Assistance Grant Program

The National Science Foundation would create a technical assistance grant program for small and medium enterprises to implement FlexHEG-compliant systems, ensuring that compliance costs don't create barriers to market entry or innovation.

### Projects that grants could fund:

- Development and implementation of custom guarantee verification software
- Integration consulting and staff training on FlexHEG operational protocols
- Development of open-source interface libraries that allow smaller organizations to effectively utilize FlexHEG verification capabilities

**Key Benefits:** Addresses the knowledge gap smaller organizations face when implementing hardware security systems, preventing an AI scenario where only well-resourced companies can participate. Builds lasting institutional knowledge around secure computing practices. Creating priority for startups and academic institutions working on safety-enhancing AI creates a multiplier effect where public funding advances both governance and beneficial innovation.

## Conclusion

Together, these policies create both the financial incentives and technical capabilities needed for broad adoption of hardware-enabled guarantees, making an IntelSat-like framework for AI feasible by establishing objectively verifiable compliance protocols that balance technological progress with responsible development and economic growth.

## References - Citations for Data and Research

<https://www.forethought.org/research/intelsat-as-a-model-for-international-agi-governance>

[https://www.rand.org/pubs/working\\_papers/WRA3056-1.html](https://www.rand.org/pubs/working_papers/WRA3056-1.html)

[https://yoshuabengio.org/wp-content/uploads/2024/09/FlexHEG-Interim-Report\\_2024.pdf](https://yoshuabengio.org/wp-content/uploads/2024/09/FlexHEG-Interim-Report_2024.pdf)