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NATIONAL SPACE TECHNOLOGY SCOREBOARD: UPDATED VISUALIZATION TOOL FOR COMPARING COUNTRIES' RELATIVE SPACE ACHIEVEMENT

Abstract

In 2016, an international team of authors working across space institutions, academia, and government pioneered a new framework for comparing and ranking national space activities: the **Space Technology Scoreboard**.

Now, in 2019, our authors seek to share the updated and refined version of this national space evaluation framework with the space community – with a view to building consensus and advancing the framework as a thought leadership tool for space policymakers, business leaders, and decision-makers.

As background: the Space Technology Scoreboard was introduced to systematically assess the diverse space-related technology capabilities of different countries. Using quantitative and qualitative data modeling, the initial framework categorized space technology via a metric-based comparative framework, featuring:

- **Ten different space capability or technology areas**; and
- **Six levels of technology achievement** for each of those ten areas

The output of this data model provided a visual mapping of a country's space technology capability in a single diagram in the style of a "scoreboard" – dynamically illustrating national space strengths as well as technology or capability gaps. The concept was tested by producing scoreboard charts for countries with varying degrees of space capabilities: the United States, South Korea, and Mexico. Our first results showed that the framework could serve as a simple but effective tool for comparative analysis of space technology across all spacefaring nations. As an added benefit, the framework offered a useful tool for communication – easily understandable even to those without expertise in space technology, such as politicians and the general public.

In 2019, the framework has been substantially modified, updated, and improved based on feedback from the international space community. Our 2019 IAC interactive presentation will reflect these updates – and create a useful foundation and handy visual reference for discourse throughout the E3 Space Policy, Regulations, and Economics session. **Our 2019 outputs will provide sample visual scoreboard diagrams analyzing a much larger and more diverse pool of spacefaring nations**. Using the updated framework, we will ideally target analysis of some 50 countries, ranging from established space countries to newer actors (such as Australia and Turkey) and developing world participants (such as Bangladesh or Nigeria).

We believe that viewing these results in an interactive format will stimulate strong interest among session participants – and provoke thoughtful discussion that meaningfully advances the state of space dialogue among government, academic, institution, and enterprise conference participants.