

24th SYMPOSIUM ON SPACE ACTIVITY AND SOCIETY (E5)  
Space Technologies - Earth Applications (3)

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## TECHNOLOGY TRANSFER ECOSYSTEM

### Abstract

Ideally, an efficient technology transfer strategy provides justification for continued investment in space research while simultaneously substantiating the real-world societal benefits of that investment. For instance, the concept of “Space Technology – Earth Applications” involves technology transfer as a process for promoting further innovation to meet mission and commercial science and engineering research and development (R&D) requirements. This in turn helps justify future space R&D funding, especially when potential new technology applications have been well thought out, demonstrated, and adopted.

Most R&D organizations perform design reviews during various stages of the development process. These reviews often provide a convenient occasion for identifying technology transfer opportunities. This transfer can take multiple forms, including license, assignment, or partnership to further develop and convert the technology into new products and services. However, connecting complex space science, technology components, instruments, processes, and system technologies to new applications is dependent on what we refer to as a “Technology Transfer Ecosystem.” This is based on the concept of the Business Ecosystem, which Investopedia defines as:

“... a network of organizations – including suppliers, distributors, customers, competitors, government agencies and so on – involved in the delivery of a specific product or service through both competition and cooperation. The idea is that each business in the ‘ecosystem’ affects and is affected by the others, creating a constantly evolving relationship in which each business must be flexible and adaptable in order to survive, as in a biological ecosystem.”

The Technology Transfer Ecosystem includes innovators, R&D program and project managers, business development and technology portfolio managers, intellectual property and general counsel, representatives from industry and academia, and societal needs and wants.

Technology Transfer Ecosystems can be internal to an organization or external to support collaborative initiatives across organizations. Understanding your Technology Transfer Ecosystem allows you to:

1. Adopt a methodical approach for capturing data and developing reports on technology advancements.
2. Understand the original technology development need.
3. Assess the technology novelty and its potential new applications.
4. Position the technology for transfer.
5. Target ideal industry sectors for transfer.
6. Transfer the technology.
7. Monitor how the technology transferred is being utilized.
8. Disseminate facts regarding societal implications.
9. Seek rewards and recognition for the technology’s innovators.

This paper focuses on how to understand your own Technology Transfer Ecosystem. It provides examples that highlight actual technology transfer outcomes from space R&D.