

51st IAA SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE  
ACTIVITIES (D5)

Knowledge management for space activities in the digital era (2)

Author: Ms. Nathalie Kerstens  
Eindhoven University of Technology, BelgiumDr. Christina Giannopapa  
European Space Agency (ESA), FranceDr. Sharon Dolmans  
Eindhoven University of Technology, The NetherlandsDr. Isabelle Reymen  
Eindhoven University of Technology, The NetherlandsBRINGING SPACE TECHNOLOGY TO THE ENERGY SECTOR: MANAGING INNOVATION  
ACROSS BOUNDARIES**Abstract**

Innovation in the space and energy sector typically occurs at the boundaries between disciplines and specializations, involving the creation, combination and recombination of knowledge. Yet, sharing and (re)combining knowledge among actors and organizations from different domains is challenging. To enable innovation, organizations thus have to manage these domain-specific knowledge boundaries. Yet, under novel circumstances, there is often a lack of common knowledge to effectively assess and share knowledge at a boundary.

The space and energy sector have similar sustainable ambitions and face similar technological difficulties, providing numerous occasions for learning, collaborating and creating economic and societal value. Commercializing space technology through applications within the energy sector offers many high-potential opportunities worth exploring. Yet, at the present time, there is no systematic overview of such opportunities for crossovers between space and energy and relevant actors in the energy sector are not clearly defined. A qualitative research design is appropriate in view of the complex, dynamic nature of processes to share and address knowledge, involving multiple organizations. For our in-depth case study, we selected organizations in the Dutch national ecosystem involved in bringing space technology (satellite data) to the energy sector, i.e. involved in the process from 'raw' satellite data to finished products and services in the energy market.

The data consists of interview data and archival data. During the semi-structured interviews, interviewees are invited to elaborate on their role in the organization and describe how they are involved in the value chain of commercializing satellite data.

The results of this study give insight into the processes and challenges of managing innovation when knowledge needs to be shared and assessed by organizations from the space and energy sector. These challenges include both the identification of involved organizations and their roles, as well as the identification of knowledge boundaries and the development of effective activities to cross these boundaries.