

Document control sheet

1. ISBN or ISSN	2. type of document (e.g. report, publication) Veröffentlichung (Publikation)	
3. title GAIA-X 4 AMS Advanced Mobility Services		
4. author(s) (family name, first name(s)) Konstantin Kondak	5. end of project 31.05.2025	
	6. publication date	
	7. form of publication Dissertation	
8. performing organization(s) name, address Elektra Solar GmbH	9. originators report no.	
	10. reference no. 19S21004R	
	11. no. of pages	
12. sponsoring agency (name, address) BMW	13. no. of references	
	14. no. of tables	
	15. no. of figures	
16. DOI (Digital Object Identifier)		
17. presented at (title, place, date)		
18. abstract <p>As part of the project, a Gaia-X-based data space with services in the field of "Advanced Mobility Services" was implemented and investigated in practical experiments. The focus was on the two use cases "Safe Coordination of Autonomous Vehicles" and "Connected and Safe Emergency Corridor," as well as their extension and testing using the Gaia-X data and service ecosystem that was already under development. A drone system based on an eVTOL drone from Elektra Solar GmbH was integrated into the data space with exemplary services and examined in integrated experiments for both scenarios.</p> <p>During the course of the experiments, it was successfully demonstrated that the Gaia-X services of a drone provider can be used efficiently for initial reconnaissance in the field of hazard prevention by authorities and organizations with security responsibilities. In the experiments with the overall system conducted in September 2023 in Edemissen and in May 2025 in Braunschweig, the following advantages of the developed Gaia-X architecture were confirmed in particular:</p> <ol style="list-style-type: none"> 1. The automated and secure identification of participants in the data space enables the dynamic expansion of the data space through new participants. 2. It is possible to build systems with complex Gaia-X services, even when these are hierarchically structured. For example, before the drone's video data are displayed on the operator's tablet, they can be further processed by a third-party service provider, with persons in the video stream being detected, marked in the image, and counted. 3. The configuration and start-up of the use of Gaia-X services can take place within a relatively short time. As a result, scenarios involving a rapid sequence of events, such as a fire department emergency response, can also be realized. 		
19. keywords Gaia-X, data space, drone, UAS, UAV, VTOL, eVTOL, special operations, fire department, hazard prevention		
20. publisher	21. price	

Nicht änderbare Endfassung mit der Kennung 3060487-4