



December, 2022

Recommended actions of the SAB SDRC

Based on its charter, the Strategic Advisory Board decides on the following recommended actions:

Recommended action 1: «Core competence security robotics¹»

Developments and applications of security robotics should become core competences of the DDPS.

Recommended action 2: «Application-relevant research and innovation»

The SDRC identifies the application-relevant potential of robotics and possible solutions for innovative applications.

Recommended action 3: «Recognising and confronting threats»

The SDRC recognises technological threats posed by robotics and shows how these can be countered.

Recommended action 4: «Swiss system of values»

The SDRC pursues the values and ethics of Swiss society and examines technological as well as sociological aspects of robotics.

Some guiding principles for substantiating the recommended actions are described below.

¹ In this paper, the term refers to the remit of robotics in supporting rescue teams and security forces. The focus is on mobile robotics with semi-autonomous and autonomous capabilities.

Recommended action 1: «Core competence security robotics»

Developments and applications of security robotics should become core competences of the DDPS.

To this end, the SDRC should, in association with its partners,

- continue to focus on the development and use of robotics for the Armed Forces and increasingly for other state security agencies as well as prioritise partners of the STIB (Security-relevant Technology and Industry Base)²
- further intensify cooperation in security robotics with research institutes and companies
- build up and align additional research and engineering activities to the needs and issues of the Armed Forces and other state security agencies
- expand training in the area of security robotics at the higher education institutions
- show more of the contributions made from the field of security robotics of Switzerland for the current and future security of the country through broad and active communication at all levels (Armed Forces, federal office, science, media, public events)
- and in particular together with the Armed Forces, intensify services, financial and human resources as well as increased cooperation with national and international partners

Recommended action 2: «Application-relevant research and innovation»

The SDRC identifies the application-relevant potential of robotics and possible solutions for innovative applications.

To this end, the SDRC should, in association with its partners,

- continue to research and identify the possibilities of alternative mobility concepts, navigation solutions, key technologies, human-machine interfaces and security-relevant applications
- continue to create specific research and development capacities as well as develop hardware and software components of robotics systems – from feasibility to operational support – through demonstrators
- pursue even more closely the subject of artificial intelligence in robots
- increase research efforts in the subject of human-machine teams
- build up the necessary skills more quickly and efficiently using demonstrators, prototypes and small-scale production in the course of rapid technological development
- increasingly adapt and transfer progress in civil research and development, as well as with commercial goods in applications related to security tasks (including dual-use applications)
- expand and build up the required test infrastructure, bundle it into a network and enable widespread use
- increasingly seek topic-specific innovative solutions as well as expand and use innovation areas, such as competitions, boosters, idea labs, sandboxes and test runs for the Armed Forces and other state security agencies
- increasingly exploit novel ideas of robotic solutions (such as transfer to procurement), in order to meet the challenges of the Armed Forces and other state security agencies
- take into consideration the following key applications in terms of content: search for, rescue and care of persons, CBRN incidents; fire-fighting; ordinance clearance and disposal (in particular Mitholz), engineering tasks, reconnaissance, intelligence collection, monitoring, operational picture acquisition, command and communications support, logistics and training

² In particular with the RUAG and start-ups as areas of focus.

Recommended action 3: «Recognising and confronting threats»

The SDRC recognises technological threats posed by robotics and shows how these can be countered.

To this end, the SDRC should

- continue to systematically observe, analyse and where possible intensify the technological and market developments, in particular in drone defence and in the area of higher autonomy of military, unmanned systems
- continue to actively contribute scientific and technological competences at consultations with the Federal Administration
- increasingly demonstrate comprehensibly and realistically threats using trials and red-teaming approaches
- increasingly examine and identify options in the defence of unmanned systems, in particular using unmanned systems (counter-robotics)
- pursue even more closely threats by autonomous or semi-autonomous weapons systems

Recommended action 4: «Orientation to the Swiss system of values»

The SDRC pursues the values and ethics of Swiss society and examines technological as well as sociological aspects of robotics.

To this end, the SDRC should

- continue to pursue a holistic approach and address technical, ethical, legal and social challenges of robotics
- continue to maintain a close exchange with research institutes of ethics and legal studies in Switzerland and respond to socio-scientific research questions
- use the principles of the Armed Forces with regard to autonomous weapons systems (legality; responsibility; reliability; agility) equally as a framework for orientation and ensure coherence with Switzerland's official position
- encourage employees and research partners to actively address and discuss any ethical concerns or risks