

Procurement audit of reconnaissance drone system 15 armasuisse

Key facts

armasuisse (ar) is purchasing a Hermes 900 HFE drone system from Elbit Systems Ltd. with a loan of CHF 250 million. The scope of procurement includes six drones, including ground components, simulator and logistics. The reconnaissance drone system is used to monitor large areas, to search, detect and pursue targets, and to protect critical infrastructures and the troops themselves. The drone is controlled by a pilot from a ground control station via an encrypted radio or satellite connection.

The reconnaissance drone system 15 (ADS 15) also integrates "Sense & Avoid (SAA)", a system for automatically detecting other aircraft. It initiates a rule-compliant evasive manoeuvre when an aircraft finds itself on a collision course with the drone. It should be possible to use the drone in all airspaces without the need to be escorted by a manned aircraft. ADS 15 will be introduced gradually from 2019 and will replace the ADS 95 "Ranger" system, which has reached the end of its life.

The aim of the audit of the Swiss Federal Audit Office (SFAO) was to clarify risks in connection with procurement, the materials competence centre and safety (airworthiness and IT protection). In addition, a follow-up of recommendations from the last audit of the SFAO was carried out. The SFAO reviewed the four open recommendations out of a total of six. The review revealed that the recommendations have been implemented.

Procurement of a drone model that is not ready for series production

The army is the first customer of the Hermes 900 HFE drone system. Together with the SAA, this new generation of the drone meets the army's needs for the ADS 15 system. The cost of the Hermes 900 HFE system is higher than its predecessor, the Hermes 900, due to a more powerful diesel engine, better reconnaissance sensors and an emergency parachute.

To ensure that ADS 15 can be used in Swiss airspace without restrictions and without an escort aircraft, the drone must be equipped with an SAA system. There is still no internationally certified SAA for drones of this category, which is why RUAG and Elbit developed this system from scratch.

Part of the development of the Hermes 900 HFE, now also marketed under the name Hermes 900 Starliner, was supported by the Swiss government. This means the manufacturer benefits in two ways: from a share of the development costs and from any resale of the new drone system. Reimbursements to the Swiss Confederation are contractually agreed should Elbit be able to sell the Hermes 900 HFE system including SAA to other customers.

Parliament and the security policy committees were correctly informed about the object of the procurement. However, the armament dispatch lacks a critical view of variants and alternatives. No reference is made in the armament dispatch to any risks for the materials competence centre with regard to the foreign supplier.

Risks of awarding materials competence control to Elbit

The ADS 15 materials competence centre was awarded to Elbit. For its part, the manufacturer has delegated certain tasks to RUAG. However, it has been the Federal Council's intention to unbundle RUAG¹ since June 2018. The concept envisages, among other things, that the materials competence centre function of complex and safety-relevant systems of the armed forces will in future be located at RUAG MRO Switzerland.² From procurement preparation in 2011 to the signing of the contract in 2015, unbundling and reorganising RUAG was not an issue and could not yet be considered by ar. Effects on ADS 15 can therefore only be assessed once the reorganisation and tasks of RUAG have been approved by the Federal Council. This decision was taken by the Federal Council after the audit had been completed.

ar clarified and assessed the risks in the event that Elbit is unable to fully provide the contractually agreed services (Service Level Agreement) during the exploitation phase. The greatest risk lies in securing "Level 2", the materials competence centre at the manufacturer's level. Supply bottlenecks could occur here. Preliminary clarifications on the relocation of "Level 2" to a European branch of the manufacturer should be continued.

The supplier quality management and the qualification for the components are delegated to the materials competence centre. At the time of the audit, there was no overall overview of all of the drone system's articles and components. ar is currently only aware of the most important subcontractors of ADS 15, and there is also no risk management, for example with regard to the risk of failure of supply sources. ar should operate pragmatic supplier management with regular evaluation of the original manufacturer. In order to be able to classify the bottleneck risk and initiate measures in good time, summary reports on the assessments of the most important subcontractors can be requested from the manufacturer.

Approval on track, IT protection has potential for improvement

The approvals for the drone system by the Israeli civilian authorities and ar have not yet been obtained, but are on course. There are currently no internationally binding regulations for SAA systems. The Swiss army plays a leading role in Europe in the field of SAA. It makes a substantial contribution to the drafting of SAA regulations and is represented in the relevant bodies. Internationally binding regulations are expected after completion of procurement. It is therefore possible that adjustments to the SAA system may be necessary in the future.

ADS 15 is a networked system and thus offers attack points for cyber attacks and represents a potential threat. In the event of unauthorised access, sensitive data could be stolen. As a result of the internal audits by ar Science and Technology on information security and data protection, a list of measures was defined to increase IT protection.

The SFAO believes that these protective measures to close the remaining gaps should be re-examined.

Original text in German

¹ In the meantime (in March 2019), the Federal Council made a decision on unbundling RUAG.

² Further information on unbundling RUAG can be found at <https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-71360.html>.