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Specifications for the procurement of a new combat aircraft (NKF) and of a new extended-range ground-based air defence system (Bodluf GR)

[German version is authentic]

1 Objective

The purpose of this document is to:

- define the specifications needed before the beginning of the project or programme in the form of mandatory requirements and desirable characteristics for the NKF and Bodluf projects, based on considerations of security, arms procurement, and economic policies.
- use these specifications to define framework conditions for starting and implementing the two projects, new combat aircraft and new extended-range ground-based air defence system.

2 Projects

New combat aircraft (NKF) and extended-range ground-based air defence (Bodluf GR).

3 Specifications based on security policy

3.1 Mandatory requirements

1. Operational requirements for the new combat aircraft (NKF):

a. The fleet as a whole must be capable of:

- carrying out routine air policing tasks around the clock and enforcing restrictions on the use of Swiss airspace;
- in times of heightened tension, responding within minutes to airspace infringements by non-cooperative civilian aircraft, military transport aircraft, drones, and individual combat aircraft in the entirety of Swiss airspace;
- in case of armed attack, in cooperation with the ground-based air defence systems, denying enemy air superiority for a limited period and simultaneously supporting the armed forces with operational firepower beyond the range of Swiss artillery and with air reconnaissance.

b. The following key figures serve as a theoretical model to calculate the size of the fleet. The fleet has to be large enough to:

- in a normal situation, carry out normal air policing operations, in addition to instruction and training;
- in times of heightened tension, keep at least four aircraft permanently on patrol for at least four weeks;
- in the event of armed attack, in parallel with air defence missions engage combat aircraft for air reconnaissance and strike missions.

- c. The logistics package¹ has, at least, to be designed to:
 - enable permanent flight operations when borders are open and spare parts supply to and from Switzerland is possible;
 - enable the protection of air sovereignty for about six months, in addition to instruction and training, when borders are closed and spare parts supply to and from Switzerland is not assured.
2. Operational requirements for the ground-based air defence system (Bodluf GR):
 - a. The long-range ground-based air defence system has to be capable, either independently or in cooperation with combat aircraft, of protecting at least 15,000 km² and, as a priority, engaging targets in the medium and upper airspace. The system shall be effective to altitudes beyond 12,000 m (vertical) and a distance beyond 50 km (horizontal).
 - b. The ground-based air defence system's sensors contribute to the recognized air picture.
 - c. The candidates' capabilities to counter ballistic missiles are to be clarified.
 - d. The following data serve as a theoretical model to calculate the logistics package:
 - continuous operation as long as there is an assurance of a continuous cross-border flow of materiel;
 - when the cross-border flow of materiel is not assured, sustainability has to be at least six months.
3. Governments and manufacturers to be included in the evaluation:
 - a. For the new combat aircraft: Germany (Airbus: Eurofighter), France (Dassault: Rafale), USA (Boeing: F/A-18 Super Hornet; Lockheed-Martin: F-35A).²
 - b. For the extended-range ground-based air defence system: France (eurosam: SAMP/T), USA (Raytheon: Patriot).³
4. There are no cross-project requirements for the choice of supplier states for NKF and Bodluf GR. That is, there is no requirement that the two systems shall be produced in the same state or in different states.
5. There must be interoperability, even if it involves dependence, with neighbouring states and Partnership for Peace participating states, especially in the areas of tactical data transmission (tactical data link), radio transmission (especially secure voice transmission), Friend or Foe Identification (IFF), and precision navigation (satellite navigation GPS or Galileo).

¹ The logistics packages include, for example, ground-based equipment and spares, plus the technical support provided by the manufacturer during the commissioning period.

² The Swedish manufacturer Saab informed armasuisse on 13 June 2019, that Saab's Gripen E fighter aircraft would not participate in the flight and ground tests for a new fighter aircraft for the Swiss Armed Forces in Payerne. and is no longer part of the evaluation.

³ On 22 March 2019 Israel did not submit an offer for the system "David's Sling" to armasuisse. Therefore, this system is no longer part of the evaluation.

3.2 Desirable characteristics

1. Once the combat aircraft are operational, flight operations are to be conducted with own operating personnel. Maintenance conducted by troops should be able to be carried out with about the same number of personnel as currently.
2. For maintenance (e.g. procurement and storage of spare parts) and training (e.g. use of airspace, air bases, firing ranges, and simulation infrastructure), there should be – to the extent compatible with Swiss neutrality – opportunities for cooperation with the producer states and/or other states that operate the same system.

4 Specifications based on arms procurement policy

4.1 Mandatory requirements

1. Procurement and maintenance are conducted on the basis of competition and cost-effectiveness, in accordance with the Federal Council's principles for arms procurement.
2. The invitation procedure (government-to-government as well as to producer company) is used for the procurement of both the new combat aircraft and the ground-based air defence system.
3. Centre for maintenance, overhaul and repair (CMRO):
 - RUAG MRO Switzerland is designated as centre for maintenance, overhaul, and repair for the new combat aircraft as well as for the extended-range ground-based air defence system. In this capacity, RUAG MRO Switzerland assumes those tasks not carried out by troops in the areas of technical system support, materiel management between Switzerland and foreign states, aircraft maintenance and the Bodlup GR system maintenance. The scope and depth of the tasks assigned to RUAG MRO Switzerland will be determined during the evaluation.
4. All candidates for the new combat aircraft must conduct at least part of their flight and ground testing in Switzerland.
5. Apart from minimal adjustments necessary (e.g. integration into Swiss command and control systems), there may be no "helvetisation", i.e. the systems (combat aircraft and extended-range ground-based air defence) shall be introduced to and operated by Switzerland in the same configuration as by the producer state and released for export.
6. Switzerland seeks a one-type fleet for combat aircraft. Once all new combat aircraft have been delivered and introduced into service with the Swiss Air Force, the current F/A-18C/D aircraft will gradually be withdrawn from service. The F-5 Tiger aircraft will be decommissioned before the beginning of deliveries of the new combat aircraft.

4.2 Desirable characteristics

1. As far as possible, the combat aircraft being evaluated should be test flown by Swiss pilots.
2. To enhance systems expertise, a core team composed of Swiss industry employees and armed forces personnel should be involved, at a facility of the producing company or a subsidiary thereof, in the final assembly of the new combat aircraft. Final assembly in Switzerland is not a requirement, but is also not ruled out.
3. In order to increase the degree of autonomy, the aim should be to acquire the rights for autonomous further development of C2 software (ground-based air defence system, airspace surveillance system). Offsets

5 Offsets

5.1 Mandatory requirements

1. For the procurement of the new combat aircraft offsets in the amount of 60% of the purchase price will be demanded.
2. For the procurement of the extended-range ground-based air defence system offsets in the amount of 100% of the purchase price will be demanded.
3. The implementation of offset obligations begins after the procurement contract has been signed; up to 20 % of the overall volume can be offset by transactions conducted in the course of the preceding period of five years (offset banking agreements).

5.2 Desirable characteristics (target parameters)

1. The offset obligation of 60% of the contract value for NKF is sub-divided as follows: 20% direct industrial participation⁴ and 40% indirect industrial participation, primarily in the technology and industry base relevant to security (STIB)⁵.
2. The offset obligation of 100% of the contract value for the extended-range ground-based air defence system is sub-divided as follows:
 - a. 60 % for STIB industry:
 - 20 % direct offsets,
 - 40 % indirect offsets.
 - b. 40 % for other industries (indirect industry involvement).
3. The following distribution between the three regions will be adhered to as far as possible: 65% German-speaking Switzerland, 30% French-speaking Switzerland, 5% Italian-speaking Switzerland.
4. Multipliers are permitted for direct and indirect offsets. These multipliers take into account that the economic value generated by investments may be greater than the nominal amount.

6 Evaluation criteria

1. The candidates are compared with a cost-benefit analysis.
2. The evaluation, or the calculation of utility, focuses on the following main criteria:
 - effectiveness (operational effectiveness, operational autonomy, etc.),
 - product support (ease of maintenance, support autonomy, etc.),
 - cooperation (military training cooperation, e.g. the use of airspace, air bases, firing ranges and simulation infrastructure, as well as cooperation with the producer and/or the government of the producer state(s) during the in-service period, e.g. in the areas of maintenance, spare parts management, further development, etc.),

⁴ In case of direct offsets, the transactions are directly related to the arms procurement concerned, e.g. Swiss companies supply components for the item of defence equipment being procured or assume the task of developing or manufacturing it under a partial or a full license.

⁵ Indirect offsets in the area of technology and industry base relevant to security as in the following industrial areas: 1. Machinery industry, 2. Metal industry, 3. Electronic and electrotechnical industry, 4. Optical industry, 5. Watch industry, 6. Vehicle construction/wagon construction industry, 7. Rubber and plastic products, 8. Chemical products, 9. Aerospace, 10. Information technology industry, software engineering, 11. Cooperation with universities and research institutions.

3. direct industry involvement or industry programme (extent and quality (STIB)). The evaluation will consider both the procurement costs of the systems and the costs of operating them for 30 years. However, the costs of any upgrade programmes and of decommissioning will not be taken into account, as they cannot be estimated with any degree of reliability.

7 Financial volume

1. The financial volume for the procurement of new combat aircraft amounts to a maximum of six billion Swiss francs (according to the national consumer price index in January 2018).
2. The financial volume for the procurement of the extended-range ground-based air defence system amounts to a maximum of two billion Swiss francs (according to the national consumer price index in January 2018).
3. The procurement of new combat aircraft and an extended-range ground-based air defence system for up to six and two billion Swiss francs (according to the national consumer price index in January 2018) is expected to be submitted to Parliament in the armed forces message 2022. The procurement budget will include a risk portion, inflation and VAT on imports.
4. The budget for infrastructure adjustments is expected to be authorized by the Parliament based on an infrastructure message 2022.

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