THE SWISS ARMED FORCES

Strengthening Defence Capability

Extract

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Summary

In recent years, the Swiss Armed Forces have established the framework for their future development. This has resulted in a distinct vision for the period after 2030, outlining the direction in which the Armed Forces aim to evolve in the medium to long term, along with a strategy detailing how these objectives will be accomplished.

Findings from the ongoing conflict in Ukraine have generally confirmed the approach of the existing plans. The significant deterioration of the security situation in Europe due to the Russian war of aggression has, however, made implementation more urgent.

This report contains information about the plans of the Armed Forces and describes what is needed to ensure that they are capable of defending the country. The level of detail in the plans and solutions varies. More details can be provided in areas where basic reports have already been published, compared to areas such as logistics which are still in the conceptual phase.

The security situation has deteriorated

The Russian aggression against Ukraine represents a significant turning point for Europe's security policy. The rules-based international order is facing increasing pressure due to a resurgence of power politics. The era of peace in Europe is coming to an end. Both Russia and most European countries are significantly expanding their military capabilities. War as a continuation of politics with other means has become a geopolitical reality once again.

At the same time, military capabilities are developing rapidly in qualitative terms. New technologies have the potential to revolutionise the character of war more quickly than initially assumed.

Defending actively in all domains

The future design of the Armed Forces begins with its doctrine, which outlines how the military forces carry out their missions and which ends will be achieved.

In a hybrid conflict setting, a broader interpretation of defence is necessary compared to the past. Units must be capable of fighting, protecting, and helping in the same area simultaneously or in rapid succession. Whether protective tasks are carried out in support of civil authorities or as part of the original defence mission is a political decision.

In the event of an armed attack, defence is conducted across all domains: land, air, cyber, electromagnetic sphere, space, and information domain. On the ground, combat units defend against an attacker in main effort zones to gain superiority and to prevent the attacking forces from achieving their objectives by inflict-

ing significant losses, compelling them to cease combat operations. Beyond the main effort zones, the primary tasks are area surveillance, protection of critical infrastructure, and neutralisation of irregular actors.

In order to conduct Multidomain Operations effectively, it is important to anticipate potential enemy courses of action, establish a networked command and control structure at all levels, ensure strong force protection, and maintain sustainability even during prolonged conflicts. Additionally, the Swiss Armed Forces must be able to defend in cooperation with other military forces after the obligations under the neutrality law have ceased to apply. They must be prepared to ensure no material, organisational, or processual obstacles hinder politically desired cooperation.

Consistently aligning capabilities, organisation, training, and infrastructure to defence

Defence is at the heart of armed forces development. The Swiss military needs a comprehensive, well-rounded capability profile to tackle a wide range of challenges. These capabilities determine the material, infrastructure, organisation, and training requirements of the Armed Forces.

Conducting active defensive combat operations in main effort zones has significant implications for the organisation of the ground forces. Instead of the current land forces (i. e., a Mechanised Division with three Mechanised Brigades), two Heavy Divisions should now be formed under the Joint Operations Command. It is important to note that military support for civil authorities, protective tasks outside the main effort zones, and territorial tasks are still crucial. Therefore, additional light forces should be provided to handle these location-specific tasks effectively in the future.

For the Armed Forces to be able to fulfil their missions, they must be adequately staffed, which is proving increasingly difficult. However, before any plans to increase personnel to enhance the defence capability can be considered, the current shortage in manpower issues need to be addressed. The Armed Forces have implemented various measures to tackle the personnel problem and are planning additional measures, which are detailed in the Federal Council's report on the implementation of the Armed Forces Development Programme (AFDP).

The Armed Forces require more and better-protected military infrastructure to perform their defence mission more effectively in the future. A further reduction, as planned under the current stationing concept, entails major risks.

Training must be consistently geared towards defence. This includes practicing the combined use of fire and manoeuvre at battalion level and above, as well as engaging in combat operations in urban terrain, similar to that found in the Swiss Plateau region.

The first step towards strengthening the defence capability will take until the 2030s

The main limiting factor in developing and retaining the required capabilities is funding. If the military units were fully equipped with modern systems and the new much needed capabilities were also developed, it would require more than CHF 40 billion in total funding. Since it is not feasible to do everything at once, a different approach is necessary.

The objective of significantly enhancing defence capability should be accomplished based on three strategic pillars: 1) adaptive development of capabilities, 2) using the opportunities of technological progress, and 3) greater international cooperation. Instead of replacing entire system fleets, as in the past, the Armed Forces should be modernised gradually in future. Renewing systems in feasible steps will strengthen defence capability more quickly. Such an approach is particularly well-suited for land forces. For instance, in the future, a third of a particular type of unit should be equipped with new systems before the rest are renewed in subsequent steps. In this way, new capabilities can be developed more quickly, experience can be gained with the acquired systems for future procurement rounds, and technological progress can be taken into account and utilised.

The first modernisation phase up to 2031 will involve investment to renew systems crucial to Switzerland's defence capability. On the ground, this includes antitank weapons covering several kilometres, indirect fire and various new protected vehicles. At the same time, equipment shortages in the mechanised units must be addressed. Some of the Leopard main battle tanks in storage should undergo an upgrade programme. Shortcomings in medium and lower air space defence, particularly in light of the threat posed by guided weapons, cruise missiles, and drones, will also be addressed. Furthermore, modernisation efforts will extend to networked command and control, intelligence gathering, cyber defence, electronic warfare, and tactical air mobility. Finally, significant investment is needed to increase stockpiles, especially of munitions.

The initial phase of enhancing Switzerland's defence capability requires an investment of around CHF 13 billion from 2024 to 2031. The Swiss Parliament has approved a gradual increase in the defence budget to reach 1% of GDP by 2030 at the latest, ensuring sufficient funding. However, due to the Federal Council's resolutions to eliminate the structural deficit, the increase in defence spending will happen at a slower pace, and the 1% of GDP goal will not be achieved until 2035. This extension of the spending increase by five years means that the planned first step toward strengthening defence capabilities will be delayed until the late 2030s. With additional funding, the modernisation steps could be implemented more expeditiously.

1 Introduction

1.1 Purpose and Content

In this report, the Armed Forces provide information about their plans and outline – after implementing the Armed Forces Development Programme (AFDP) – what is needed to strengthen the defence capability.

To steer the changes effectively, it is crucial to not only set clear goals but also to provide an overview of the current situation. Therefore, we will first outline the current deficiencies and challenges in light of the worsening security situation (section 2). Subsequently, we will delve into the core principles of the Armed Forces' future doctrine (section 3), contemplate the military capabilities based on these principles, and specify the necessary actions for the Armed Forces regarding equipment, organisation, infrastructure, and training (section 4).

The level of detail in the information provided in this report varies. More details are available in areas where basic reports have already been published than in those still in the conceptual phase, such as logistics.

The reports contain reflections and solutions proposed by the Armed Forces which still need to be politically approved. They provide a basis for drawing up the content required for the 2024 Armed Forces Dispatch and the report on Postulate 23.3000 of the Council of States' Security Policy Committee on strengthening defence capability. The political authorities will make decisions on the future development of the Armed Forces based on these documents.

National defence involves much more than the Armed Forces simply repelling an armed attack. In Switzerland, this requires intensive collaboration between all security-relevant instruments and policy areas at the federal, cantonal, and communal levels, as well as close cooperation with the economy and international coordination of the measures taken by Switzerland. However, this report does not contain a comprehensive security and defence strategy, which will be presented in the next security policy report.

1.2 Key Principles and Strategic Priorities

In order for the Armed Forces to fulfil their missions effectively, they need to focus on future-oriented development. The Security Policy Report 2021, released by the Federal Council on November 24, 2021, provides the basis for the medium to long-term development of the Armed Forces. Following the Russian war of aggression against Ukraine, the Federal Council issued a supplementary report on September 7, 2022, outlining the initial findings from the conflict and their implications for the development of the Armed Forces' capabilities. The report emphasises the need to modernise the Armed Forces' capabilities and equipment, based on the lessons learned from the conflict. Additionally, Switzerland's security and defence policy should be more consistently aligned with international cooperation than it has been in the past.

Both, the 2021 Security Policy Report and the 2022 Supplementary Report outline the strategic direction for the Armed Forces. In recent years, the Armed Forces have been establishing and refining key principles to guide their future de-

velopment, in conjunction with the implementation of the AFDP. Certain portions of this information were previously released in reports such as the 2017 "Report on the Air Defences of the Future," the 2019 "Report on the Future of Ground Forces," and the 2022 "Global Concept for Cyber and Electromagnetic Capabilities."

Overall, a clear vision of how the Armed Forces should develop exists. This vision focuses on the intention to strengthen defence capability based on three strategic pillars: adaptive development of military capabilities, taking advantage of the opportunities presented by technological progress, and more intensive international cooperation.

Strategic priorities for strengthening the defence capability:

Adaptive development of military capabilities because
- this enables the Armed Forces to take account of rapid changes in the environment and the unpredictability of the security situation,
- an approach based on feasible, precisely defined steps enables the Armed Forces to flexibly transition from one defined state to the next, whereby every step must strengthen the defence capability,
- the Armed Forces' performance is constantly maintained over a longer development period as a well-balanced overall system.

Using opportunities presented by technological progress because
- it will improve the Armed Forces' overall performance by providing better and more comprehensive situational awareness and, with it, a knowledge and decision-making advantage over the enemy and the ability to operate more quickly, over greater distances, and more precisely than in the past,
- the risks to which military personnel are exposed during combat operations can be reduced,
- processes can be optimised through digitalisation, allowing resources to be used more efficiently and in other areas..

More intensive international cooperation because
- the Armed Forces benefit from the experience and standards of other military forces while using their own capabilities to contribute to security in Europe,
- it opens up additional opportunities for the Armed Forces, particularly in terms of training and procurement,
- it increases political freedom of action regarding operational cooperation.

The war in Ukraine has generally confirmed that the priorities of existing planning are correct. Nevertheless, it has been underlined that the timeframe has changed: the situation is now much more urgent. In response, the Armed Forces introduced measures at the end of 2022 to improve defence capability short term. However, these measures do not replace other urgent steps needed to adapt the Armed Forces to rapidly changing environmental situations and developments.

1.3 Objectives

Overall, the main objectives over the coming years are:

- Improving the defence capability through internal measures within the Armed Forces as quickly as possible;
- Strengthening the defence capability over the medium to long-term, taking account of the security situation and technological progress;

  To achieve this:
  - The doctrine, organisation, materiel, infrastructure, and training should be aligned with the Armed Forces' constitutional defence mission;
  - A gradual approach should be adopted to increasing the defence capability in order to avoid radical reforms and to ensure a high-performance overall system is maintained during the renewal of the entire Armed Forces;
  - The air defence systems should be integrated into the Armed Forces using international cooperation, and existing shortfalls in military air defence equipment should be addressed;
  - The Cyber Command should be made operational, the development of capability continued, and the digitalisation of the Armed Forces driven forward to ensure a networked command and control structure of the Armed Forces and its partners;
  - Armed Forces logistics should be consistently geared towards defence – from production to operational logistics;
  - The equipment of around one-third of the ground forces should be renewed in an initial step;
  - In parallel, the next steps of the renewal should be tested iteratively using innovation and driven forward to ensure future technology developments are taken into account more effectively;
  - In addition, organisational adjustments should be tested in pilot trials and gradually implemented;
  - Existing combat, C2, and logistics infrastructure with graduated operational readiness should be maintained or, where necessary, reactivated and adapted to new requirements;
  - The decentralisation capability of the Air Force should be re-established;
  - Training and training infrastructure should be geared towards ensuring basic readiness;
  - Stockpiles, especially munitions, should be increased;
  - Interoperability, particularly through the consistent application of standards, should be improved, and international cooperation stepped up through Switzerland's own contributions;
  - The process of continual and adaptive capability-oriented development of the Armed Forces should be institutionalised.

1.4 Challenges

Funding is the main limiting factor in developing and maintaining the necessary capabilities. If all military units were fully equipped with modern systems and the new much needed capabilities were also developed, it is estimated that the total funding requirements would exceed CHF 40 billion. Additionally, there is a need for funding to increase stockpiles of munitions, fuels, and spare parts. Given that not all measures can be implemented simultaneously, a gradual approach is necessary. These steps could be implemented more quickly with greater funding available. Conversely, a slower increase in spending would extend the time horizon for strengthening defence capabilities into the late 2030s.

2 Background

2.1 The Current State of Switzerland's Defence Capability

In recent decades, the Armed Forces have had to set priorities due to limited financial resources. It has been impossible to fully equip all units, and not all outdated systems could be replaced. One reason for this was insufficient financial resources to address all the gaps, and another reason was the inability to replenish various understocked equipment because the corresponding systems were no longer in production and could, therefore, no longer be procured.

Even in the current situation, many defence skills have been maintained, at least at a limited level. Both officers and NCOs have continued to learn how to plan and execute combat operations through schools and training courses. The units also practiced their tasks in exercises on real terrain. For example, mechanised troops participated in the PILUM exercise, and the Air Force took part in the STABANTE exercise in 2022. Mobilisation was reintroduced with the AFDP, allowing large units to be called up and deployed quickly.[1]

Given the Swiss militia system, it is difficult to fully assess the negative impact of equipment shortages. This is because conscripts only engage in military service during three-week repetition courses each year. As a result, the same equipment is rotated to troops on courses and those in basic training. However, if multiple units had to be mobilised concurrently in the event of an armed attack, significant equipment shortages would become apparent.

The sustainability of the Armed Forces is currently quite limited. Since the end of the Cold War, logistics have been primarily organised based on economic principles and optimised for training needs. This also applied to stockpiles, as procurement volumes were primarily based on training requirements. Furthermore, a significant amount of the underground infrastructure for managing and providing logistics was dismantled.

The current situation regarding command-and-control capability is equally challenging. The IT and C3 systems of the Armed Forces are highly complex and have developed organically over time. There is no standardised platform for procuring various applications and systems, leading to restricted interoperability and higher costs due to a lack of standardisation and synergies.

Prior to the arrival of 36 F-35A combat aircraft and five Patriot fire units, there are also significant gaps in air defence. In the event of an armed conflict, ground troops can only be successfully deployed in coordinated, large-scale combat operations if they are effectively protected against air attacks. Critical infrastructure, including civil and military facilities such as logistics and command and control, is also vulnerable to air threats. Currently, the Swiss Air Force's sustainability would be very limited during an armed conflict, especially since long-range

1 According to the capability profile, the figure stands at 35 000 military personnel within ten days.

ground-based air defence systems, which could have been used to relieve the fighter aircraft fleet, were decommissioned in 1999.

In the field of interoperability, efforts have so far focused on enhancing cooperation in peace support operations, as well as in combined training, armed forces development, and armaments procurement. Since 1998, Switzerland has been participating in NATO's Planning and Review Process (PARP) to enhance its interoperability. Various units and individual military personnel frequently take part in bilateral and multilateral exercises. However, international cooperation has not yet prioritised the enhancement of defence capabilities.

2.2 Changes in Security Policy Environment

2.2.1 Greater Competition between the Major Powers

The rules-based international order is facing growing pressure. Conflicts of interest are increasingly involving the use of military force. For Europe in particular, the Russian war of aggression against Ukraine, in violation of international law, marks a turning point in terms of security policy with far-reaching implications The conflict has greatly changed the security situation in Europe, marking the end of a period of peace that began over 30 years ago with the collapse of the Soviet Union and the end of the Warsaw Pact. Efforts to integrate Russia into a European security structure have failed.

Not only Russia, but also China is asserting its security and economic interests with little regard for the interests of other countries, and at times in violation of international law. If tensions in East Asia persist or turn into armed conflict, the United States, which sees China as the main challenge to its strategic interests, may focus even more heavily on the Indo-Pacific region. This could lead to a reduction in the presence of US troops in Europe, which is also relevant to security in Switzerland's close environment.

Due to increased competition among major powers, as well as the rise of regional powers and non-state actors, the security situation may worsen in the coming years. Military assets are becoming more critical in this new strategic environment and can be viewed as a form of security currency. This is evident from the fact that nearly all European countries are investing significantly in their armed forces to enhance their defence capabilities against potential Russian aggression. In its new 2022 Strategic Concept, NATO has decided to increase its presence in Eastern European member states substantially. NATO will continue prioritising deterrence and collective defence against armed attacks as part of its defence alliance.

Overall, Switzerland's security environment will remain volatile, unpredictable, and dangerous in the long term. The situation can change quickly and surprisingly, and long advance warning periods no longer apply.

2.2.2 Future Challenges

Threats emerge when both the military potential and the intent to use it exist. Developing such potential takes time, while intentions can change quickly. Despite significant reductions over recent decades, huge military potential still exists in Europe and is set to increase, given the new security situation. The Russian armed forces will receive much more funding over the coming years, which – after the vast exhaustion of its means in the ongoing Ukraine war – will at least enable quantitative restoration of its military potential. However, equipping troops

with modern technology may only be possible to a certain extent over the short term due to restrictions created by Western sanctions.

The European states currently giving significant amounts of primarily older weapons to Ukraine will fill the gaps created over the coming years by buying modern equipment. The rearmament of the military forces in Europe impacts the Swiss Armed Forces as more intensive procurement of military systems and ammunition, not just in Europe but worldwide, will result in much stronger demand for equipment, longer delivery times and national prioritisation.

It is not just the quantitative increase in military potential that presents a challenge, but also and primarily its qualitative development as a result of technological progress, which is producing innovations at an almost exponential rate.

The increasing number of sensors and advanced cyber capabilities are of great importance. Additionally, long-range, high-precision weapons like guided and cruise missiles, hypersonic weapons, and highly accurate loitering munitions that can linger in a target area over a long time, are also significant. Furthermore, the development of robotics, particularly unmanned systems in the air, on land, and at sea, must be considered. The ability to connect all these components and rapidly disseminate accurate and timely information about military operations is crucial.

These technological innovations have significantly improved the capability to permanently monitor large areas, identify small and moving targets with high precision, and almost instantaneously engage them even at long range with unprecedented accuracy. The availability of inexpensive commercial goods (e. g., drones), which can achieve similar performance levels to expensive weapons systems, is opening up new forms and areas of deployment. For example, large quantities of cheap drones could be used to saturate air defence systems so other means of attack can successfully overcome them. In overall terms, these capabilities open up entirely new military possibilities. Furthermore, artificial intelligence, combined with robotics, may become a dominant factor on the future battlefield. The collective impact of these technological developments has the potential to fundamentally revolutionise warfare – even more profoundly than radio communications, aircraft, and tanks in the first half of the 20th century.

New technologies allow potential aggressors to achieve their objectives without directly confronting the Armed Forces of the state under attack. Sophisticated sensors, stand-off weapons, cyber operations, and information warfare are vital in modern conflicts and are rapidly evolving. These systems enable states to detect targets hundreds or even thousands of kilometres away. Cyber-attacks can be carried out anywhere in the world and are relatively easy to deny. As a result, the protective effect previously offered by geographical distance has diminished in recent years and is likely to decrease further.

Even as long-distance weapons, cyber operations, and disinformation campaigns become more important, traditional forms of threat will continue to be relevant. In fact, new technologies enhance conventional threats, making them even more perilous by increasing the ways in which attacks can be carried out.

In modern conflicts, states use diplomatic, informational, military, and economic means for as long as possible, below the threshold of a conventional armed conflict, and, therefore, they often use non-state actors, such as private security and military companies or criminal organisations. Common traits of such non-state

actors are global networks and high speed in terms of their organisation and coordination. They often operate covertly so that an aggressor can deny responsibility for an attack.

If a state fails to achieve its objectives in this way, it may gradually escalate and de-escalate the situation before ultimately, if required, openly using military force. Conflicts are often ambiguous, occurring in a grey zone between war and peace – a strategy known as hybrid warfare.

2.2.3 Transnational Dimension of Military Threats

As a neutral state, Switzerland is required by international law to deny its national territory from being misused for military operations by foreign powers involved in a conflict. If the country is attacked militarily, the Swiss Armed Forces must be able to prevent an enemy from achieving its objectives. The ability to defend itself against a conventional joint operation autonomously depends on the forces deployed by the enemy and the duration of the armed conflict. After the violation of neutrality, the option of Switzerland cooperating with the adversary of a militarily strong aggressor and conducting combined military operations has always been part of Swiss security policy.

The option of autonomous defence is out of the question from the outset if an enemy deploys long-range weapons on a large scale. This is currently the case with stand-off weapons, which enable targets to be attacked at long distances, i. e., from locations well beyond Switzerland's borders. To alert the population in the event of an attack with ballistic missiles and to intercept them in flight, an extensive monitoring and defence system is necessary. Due to its small size, Switzerland cannot operate this kind of system independently. Additionally, autonomous defence capability is significantly limited by hypersonic weapons, for which there are currently no reliable defence measures. While it is possible that an autonomous defence system could be developed to intercept such weapons at least in exceptional cases, a defence system with a reasonable chance of success will likely be achieved as part of an international alliance.

3 Basic Features of the Armed Forces' Doctrine

3.1 Doctrine as Pacemaker of the Armed Forces' Development

Based on political guidance, doctrine is the first element of the Armed Force's future design. It serves as the guiding force propelling military development forward by defining the capabilities needed by the Armed Forces, as well as the required equipment, the infrastructure, and the organisation. Doctrine forms the basis for coherent military thinking *(unité de doctrine)*. Ultimately, it provides the conceptual framework for military principles and procedures outlined in field manuals and conveyed during training and military education.

Defence is the central reference point for the doctrine. The doctrine's principles set out how the Armed Forces carry out their constitutional missions, which ends need to be achieved, and the principles according to which the Armed Forces perform combat, protection and support tasks. The doctrine does not cover subsidiary assistance of civil authorities and peace support operations, as in these areas, the Armed Forces only take on a supporting role – it is the civil authorities or international organisations that determine how the missions are fulfilled. The Armed Forces only specify the tactical procedures.

The Swiss Armed Forces serve to prevent war and maintain peace. They fulfil this mission through their defence capability, which they are constantly developing, and by contributing to international peace support operations. Through their very existence, readiness, and equipment, the Armed Forces make a preventative contribution to security, peace, and stability.

Given the many potential threats, the concept of defence needs to be expanded. Defence now involves more than just compelling an armed attack by foreign military forces. The distinction between threats from inside and outside the country and between attacks by state and non-state actors is less clear than in the past. This has implications for defence objectives and how the Armed Forces must operate to combat threats effectively. In this context, defence requires military units to simultaneously help, protect, and fight in the same area.

3.2 Ends

The defence aims

- to protect the country and its population from threats that pose a danger to territorial integrity, the entire population, or the exercise of state authority, and which can only be addressed by military means even before the outbreak of open armed conflict;
- to deter enemies from launching attacks on Switzerland or prevent armed conflicts in Switzerland's immediate vicinity from spilling over into its territory by ensuring that its own capabilities are perceived as credible;
- to defend against an armed attack on Switzerland, if necessary, in cooperation with other armed forces, ensuring rapid, decisive war termination and restoring Switzerland's territorial integrity.

An aggressor may not only use a direct armed attack to achieve its goals, but it might also attempt to destabilise the country by employing hybrid warfare methods in order to restrict the authorities' freedom of action. In this scenario, enemy military forces deployed outside the national borders could take a threatening position and enable unconventional actors to operate covertly within the country without engaging in open warfare.

If violence were to escalate further, the deployment of the Armed Forces could seamlessly transition from a subsidiary security protection mission to defence. Operational authority would then be transferred from the cantons, which are primarily responsible for internal security, to the Confederation. This transfer would be subject to a decision made by the political authorities. The troops deployed would perform their service as active duty.

The decision to deploy the Armed Forces, whether to protect against hybrid warfare in a subsidiary role in support of the civil authorities or for defence, is a political one. The critical factor is the level of the threat: if the intensity and scale of the threat endanger territorial integrity, the entire population, or the functioning of state authority, and can only be addressed through military action, the Armed Forces can be deployed in active duty.

Criteria as legal guidelines to determine the situations in which the Armed Forces can be deployed on active duty (as per Sipol B 2016)

- Territorial integrity, the entire population, or the exercise of state authority are specifically threatened.
- It constitutes a persistent threat extending beyond a temporary one.
- It is a nationwide threat extending beyond a local or regional one, whereby the threat level does not have to be the same throughout Switzerland.
- It is a threat of such intensity (similar to an armed attack) that it can only be addressed by military means.

The likelihood of Switzerland getting involved in a conflict depends, not least, on its ability to defend its territory. The Armed Forces, therefore, need to be able to deter an enemy from launching an attack in all domains: on land, in the air, in cyberspace, in the electromagnetic spectrum, and in the information domain.

This can be achieved by neutralising the adversary's capabilities from a distance. The prerequisites for this are credible military capabilities. They are considered credible if they adhere to recognised military standards, if both the Swiss population and military personnel have confidence in them, if logistical sustainability is ensured, and most importantly, if a potential aggressor can clearly see that the Armed Forces would resolutely and effectively respond to an armed attack. Ultimately, it is the potential adversary who determines whether the defence capability is credible or not.

If an enemy is not deterred from escalating, it may launch a large-scale armed attack. Military operations involve coordinated, networked military forces that act simultaneously in all domains. The Armed Forces must be able to defend against such an attack independently, at least for a limited period. The aim is to ensure rapid and decisive war termination to prevent the Swiss population and infrastructure from being affected as much as possible.

In the event of a military attack on Switzerland, its obligations under the law of neutrality would no longer apply. Switzerland would be free to defend itself in collaboration with neighbouring countries, or to enter into an alliance, such as NATO. For such cooperation to be feasible, the Armed Forces need to be capable of performing important tasks in their own. Conversely, no partner would consider cooperating with Switzerland if it had to bear the entire burden alone.

3.3 Operational Principles

To successfully prevent and combat attacks on Switzerland, the Armed Forces

- protect critical infrastructure in cooperation with civil security forces and neutralise enemy actors;
- deter an enemy from using long-range weapons by being able to defend against and combat enemy potential;
- ensure air superiority through defensive and offensive actions and prevent the misuse of national airspace;
- weaken or destroy attacking enemy forces outside of national borders, in particular through offensive actions against enemy positions, supply lines, command and control structures, and key systems in all domains;
- establish main effort zones to gain local superiority there and to deter attacking enemy forces, or to inflict such heavy losses on them that they can no longer achieve their goals and are forced to break off their acts of aggression;
- ensure a nationwide presence of forces to identify and prevent adversary actions at an early stage;
- strengthen their combat operations by implementing supporting communication measures in the information domain.

Critical infrastructure is exposed to high risk before and during a conflict. Operators and civil authorities need the means to continuously protect such assets against a large number of threats. To help them perform these tasks, they would rely on extensive support from the Armed Forces. This protection must also be continued during defence operations. Regardless of the form of deployment, the purpose of such security operations remains the same: preventing damage to infrastructure as far as possible and deterring the enemy from acts of violence.

Not all infrastructure can be equally protected against potential attacks. Therefore, the Armed Forces need to prioritise security operations based on factors such as the level of threat, potential damage, and criticality. In addition to existing protective measures, the Armed Forces provide capabilities that civilian authorities do not possess, such as protection against air attacks, and enhance the overall sustainability of civilian security forces. The Armed Forces must also be prepared to take action against and neutralise irregular actors in close cooperation with civilian authorities. In areas with lower threat levels, the Armed Forces should have a visible presence through local or regional patrols and checkpoints to deter potential attackers and increase the sense of security among the population.

C4ISR capabilities play a crucial role in identifying threats at an early stage and correctly assessing their characteristics. This is essential to ensure defence in an integrated security network.

Today, stand-off weapons can be used to attack targets well beyond national borders. Simply defending against such weapons is not sufficient. The Armed Forces must also succeed in keeping an enemy at a distance as much as possible. This requires the capability to actively combat enemy potential in multiple domains. The sheer existence of such capabilities can deter an enemy from using long-range weapons, as the high costs and risks involved would make an attack not worthwhile.

Adequate control of the airspace is crucial for the success of ground units in armed conflicts. It also protects civil populations from air attacks. Integrated air defence, involving both air and ground-based systems, is essential to achieve this control. Ground-based air defence can be used to protect various areas, facilities, and military units in different layers. Fighter aircraft and drones play a dynamic role in this defence. They are not only used defensively against enemy aircraft and for intelligence gathering, but also for carrying out precise strikes on the infrastructure and equipment of the enemy air force. Potential targets include air bases, radar equipment, drone launch sites, and guided weapon systems.

Offensive capabilities can also be used to engage attacking ground troops before they reach Switzerland's defence positions. Enemy forces must be weakened through attacks on their advance axes, C2 and logistics facilities or by targeting amassed troops to reduce their combat effectiveness. In addition, their mobility must be restricted by preventing them from deploying weapon systems or manoeuvring in a coordinated way. Offensive actions, including strikes outside national borders, are integral to defence operations.

Combat units defend against terrestrial attacks in main effort zones. The aim is to achieve an advantageous balance of forces within the zone to prevent enemy forces from achieving their objectives and ultimately forcing them to break off their actions. Defence is carried out as a multidomain operation where effects in and from all domains are created well-coordinated and synchronised. Enemy advancements on the ground must be stopped as part of a combined arms combat manoeuvre, and the enemy should be worn down with ambushes and indirect and direct fire so that it cannot continue its attack. This requires the coordination of the fire and manoeuvre of Swiss combat units to minimise the enemy's means of reconnaissance, engagement, and movement and enable the Swiss Armed Forces to enforce their tasks against the enemy. In the air, the goal is to create favourable conditions for ground forces' combat operations. Combat units at tactical

levels should use several domains – such as cyber, electromagnetic and space – to monitor, disrupt, prevent or misdirect signal transmission.

Every military operation is generally supported by actions in the information domain. This information war is carried out through traditional media as well as on the internet and through social media. The goal of these actions is to influence the behaviour and attitude of enemy actors in a way that reduces their will to fight and motivation, or at least temporarily impacts them negatively, while also strengthening the resolve of the Swiss Armed Forces to carry out their mission.

3.4 Enabling Principles

To enable combat operations, the Armed Forces

- continually assess militarily relevant developments in their environment, military potential and technological advancements, and anticipate potential enemy intents in order to define the measures required for the development, readiness and deployment of the Armed Forces;
- permanently ensure force protection and C2 readiness while increasing their own robustness and resilience through protection, hardening, camouflage, deception and early decentralisation;
- endeavour to gain an advantage over the enemy in terms of knowledge and decision-making to take the initiative and exploit enemy vulnerabilities;
- are able to combat an enemy with precision in a complex environment and minimise collateral damage;
- primarily ensure autonomous sustainability through sufficient stockpiling and, secondly, through requisition;
- conduct networked combat operations at the battalion level independently based on the principle of mission command;
- are capable of performing defensive operations in cooperation with other military forces.

The Swiss Armed Forces' constitutional mission is defensive in nature, which has its disadvantages from a military point of view because it means they can only react to aggression. This makes it all the more important to regain the initiative as quickly as possible in the event of an armed attack. The enemy must be put on the defensive so that it is forced to react. This requires ongoing assessment of the military environment, anticipating potential enemy intentions, and seeking to gain knowledge and decision-making superiority. This includes identifying and exploiting enemy vulnerabilities across all domains.

Achieving an advantage in terms of knowledge and decision-making requires a dense network of various sensors which can obtain information in all domains, including outside of Switzerland's territory. The information obtained must be automated as far as possible and summarised into level-appropriate operational pictures using new technology (e. g., artificial intelligence). Once it has been decided how Swiss forces will be deployed, command and control information must be exchanged via a digitalised network. This enables the units to use their effectors quickly and precisely.

The Armed Forces must also be able to permanently ensure force protection and resilience across all domains. This is achieved by protecting, hardening and camouflaging its equipment and deceiving the enemy by creating a false operational picture. A vital element of force protection is decentralising logistics infrastructure and military equipment, such as operating combat aircraft from former military airbases or highways.

In Switzerland, there are very few uninhabited or undeveloped areas where combat operations could be conducted without negatively impacting the civilian population. The Armed Forces mainly have to carry out their missions in urban areas, where people live. To minimise collateral damage, combat units must be capable of acquiring precise target information and acting with a high degree of precision.

In defence operations, the Armed Forces must be able to perform their tasks over an extended period of time. They can only achieve this if they have robust and efficient logistics. To supply the troops with ammunition and other goods during an ongoing conflict, sufficient quantities of the required goods must be stockpiled during peacetime. In situations of heightened tension and during conflict, shortages can be addressed by requisitioning goods as a secondary measure. The basis for this is the Armed Forces Act, which obligates everyone to make moveable or immovable assets required for military purposes available to the Armed Forces when on active duty.

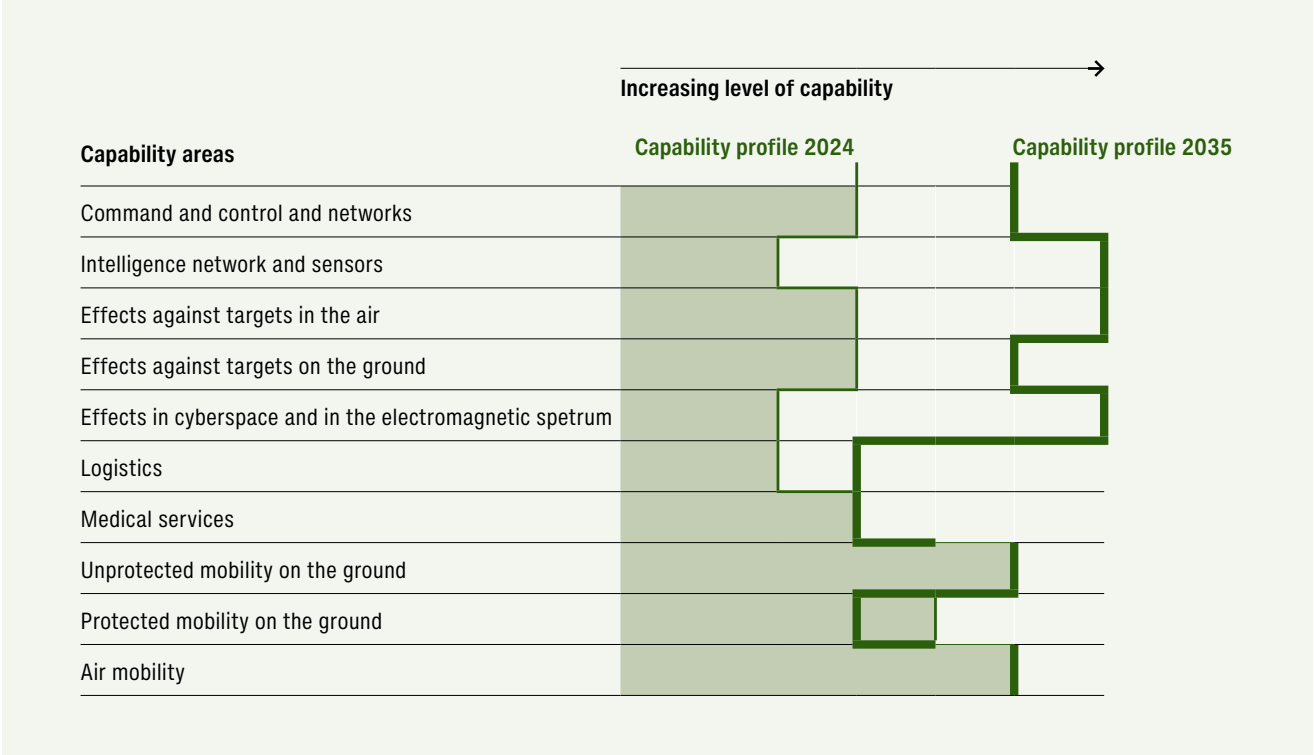
In order to facilitate international cooperation, it is essential that the Armed Forces have the capability to work alongside the military forces of potential allies. Interoperability must be ensured even during peacetime, in order to eliminate any material, organizational, and procedural obstacles to military cooperation. Interoperability enhances the political leadership's freedom of action.

Cooperating with partners enables the Swiss Armed Forces to tap into the knowledge and combat experience of other military forces and access training facilities not available to the same extent inside the country. This allows the Armed Forces to practice procedures that may be limited in Switzerland. Moreover, international cooperation opens up the potential for joint efforts, particularly in cyber defence. Ultimately, these partnerships enhance the defence capability of the Armed Forces and contribute to Switzerland's security.

Cooperation is founded on common interests and involves a give-and-take dynamic. Only those with substantial capabilities can be credible partners in cooperation. Without a meaningful contribution that has a security effect beyond its own borders, Switzerland would not be an attractive cooperation partner.

4 Vision: Reflections on the Armed Forces' Future Alignment

The Armed Forces need to be prepared to effectively address a wide range of potential threats. An enemy will primarily try to exploit vulnerabilities and capability gaps. The fewer the gaps, the more limited the enemy's options are. Therefore, it is not advisable to focus capabilities solely on specific potential threats, as this would significantly restrict the development of the Armed Forces. With a diverse and well-balanced capability profile, the Armed Forces can effectively complement other instruments of national power and enhance their sustainability. Additionally, if political authorities decide that the Armed Forces must cooperate with other military forces on operations, this would also increase their freedom of action.



Current capability profile 2024 (shaded) and the target capability profile 2035 (solid line)

4.1 Required Capabilities and Armament Principles

The doctrine describes the principles of how the Armed Forces accomplish their missions. The capabilities must enable the doctrine to be applied.

The Armed Forces require capabilities across all domains: ground, air, cyberspace, electromagnetic spectrum, space, and information domain. Additionally, coordination of these capabilities is essential through command-and-control capabilities. In defensive operations, effects are coordinated at the operational level to complement and strengthen one another. Lastly, logistics must ensure that the troops are continually supplied with consumables during operations and that their equipment remains operational under constant use.

4.1.1 Command, Control and Intelligence

Knowledge and decision-making superiority are critical to operational success. A prerequisite for this is the ability to obtain information in real-time, fuse it into operational pictures, and disseminate military decisions immediately to the units so they can act quickly and precisely. Whoever has the initiative and can dictate the pace of operations to the enemy has a decisive advantage.

Considering the rapid technological advancements and the widespread use of sensors, the primary challenge is processing an enormous amount of data into usable information and, eventually, knowledge. This is accomplished through information and communication technology, particularly leveraging artificial intelligence (AI).

With regard to command, control and intelligence, the Armed Forces must be capable of

- gathering information and data in all domains, in particular in the cyber, electromagnetic, and information domain and from outer space, too, and making it universally available;
- analysing large intelligence data volumes quickly and on an automated basis;
- ensuring effective data and information management so that knowledge is available to the troops in a useable format and in good time;
- creating and sharing a fused common operational picture that is current and tailored to each level, serving as the basis for gaining a C2 advantage through informed decision-making;
- establishing a standardised information and data architecture and coherent dissemination network;
- providing a resilient and degradation-resistant information and telecommunications infrastructure.

Networking C2 and effectors seamlessly is essential to achieving a time advantage. Network redundancy enables information to be exchanged without interruption if individual infrastructure fails, significantly increasing the military leadership's freedom of action.

In order to improve the uninterrupted exchange of information, the computing and telecommunications systems must be continually renewed and upgraded in line with technological progress. Operating new systems requires sufficient IT and transmission capacity.

At the same time, IT and telecommunications systems must be standardised and expanded so that – as part of network-centric operations – information can be exchanged quickly, securely, and on a mobile basis, including with civil partners. These measures are also required to advance digitalisation.

To improve the performance of the intelligence services, in addition to greater analysis capacity, additional and more sophisticated sensors are needed in all domains, including drones of all sizes and improved signal intelligence in the electromagnetic spectrum. The Armed Forces are also considering making greater use of sensor data from satellites.

Interoperability is crucial for exchanging technical data and facilitating C2 processes. In particular, interoperability is achieved through the use of standards. The more common standards are used, the higher the degree of standardisation and the better interoperability. Common standards not only enable cooperation between the Armed Forces and international military partners but also ensure effective interaction between systems within the Armed Forces. In the countries neighbouring Switzerland, these standards are predominantly defined by NATO.

4.1.2 Ground

Conducting defensive combat operations remain the ground forces' core competence. They must focus even more consistently on this goal. The environment in which they operate is crucial to the capabilities they need. With urban areas continually expanding, the Armed Forces must place greater emphasis on operations in built-up terrain in the future. This involves simultaneously engaging in fighting, protecting and helping, or swiftly transitioning from one task to another in the same area of operation. This mode of defence demands the highest standards in training, equipment, and leadership.

The ground forces must be equipped with lighter, more mobile and highly versatile systems, ensuring they are better prepared for increasingly complex operational environments. That also includes antitank systems, which can be used indirectly and without a vehicle. As long as the military potential to occupy territory in Switzerland's close environment still exists, the Armed Forces must maintain the capability to prevent the loss of territory or to regain it through counterattacks. In the future, this will continue to require a combination of main battle tanks, armoured vehicles, combat engineers and indirect fire. With its combination of firepower, mobility, and protection, the main battle tank continues to play a vital role. In urban terrain, main battle tanks can be engaged with infantry units. However, deploying solely mechanised units in a closed manner in urban terrain is not an option.

Being capable of effectively engaging important targets using indirect fire at different distances is critical in combined arms combat. Modern munitions enhance both range and precision, while drones can significantly improve fire control and battle damage assessment. Digitalisation also considerably reduces the time between target identification and launching a precise strike against it.

The Armed Forces are currently evaluating options for targeting key objectives at longer distances using long-range fires. Viable options include armed drones, guided air-to-ground weapons, loitering munitions, and rocket artillery. Long-range fires have a significant deterrent effect, signalling to potential adversaries that attacking Switzerland would come with substantial costs and risks.

On the ground, the Armed Forces must be capable of

- protecting critical infrastructure against a wide range of threats in all situations;
- neutralising irregular actors and infiltrated enemy special operations forces in close cooperation with civil security entities;
- effectively fighting enemy forces at various distances precisely and in a differentiated way with autonomous, modularly structured operational units geared towards built-up terrain;
- acting with precise, indirect fire at various distances;
- canalising enemy forces and restricting their movement;
- protecting Swiss troops against enemy actions through mobility and specific protective measures;
- exchanging information immediately between command posts, vehicles, weapon systems and military personnel in a digitalised C2 network;
- gathering information on various actors and condensing it into a real-time operational picture using multiple sensors in an unclear and complex operational environment;
- continuing to support the civil authorities in tackling disasters and emergency situations.

4.1.3 Air

Protecting airspace is critical for defence capability. Keeping up with rapid technological advancements is essential, as it is the only way for air defence to remain effective against an opponent using modern assets.

The procurement of 36 F-35A combat aircraft and five Patriot fire units for ground-based air defence, along with the associated guided weapons, will not only replace existing systems but also significantly enhance air defence capabilities, elevating Switzerland's ability to combat air threats to the level of many comparable European countries, both quantitatively and qualitatively. The new equipment will enable the interception of aircraft, drones, guided missiles, and short-range missiles in the upper airspace. However, sustainable control of the airspace against a powerful enemy can only be achieved through cooperation.

Integrating the new air defence systems will significantly boost the networking and digitalisation of the entire Armed Forces. The new equipment will also greatly expand the options for conducting networked multidomain operations. However, there are still gaps in defensive systems related to integrated air defence in lower airspace. This includes the need to address low-flying combat aircraft, attack helicopters, cruise missiles, guided weapons in the final stage of approach, as well as drones in order to be able to protect key targets, particularly critical civil and military infrastructure and Swiss ground troops.

Currently, the Swiss Air Force operates only three jet airbases in addition to the air transport sites. This concentration of bases in a few locations makes the assets vulnerable to long-range weapon systems. The Armed Forces aim to minimise such risks by developing the capability to decentralise and distribute air assets throughout the country quickly. In the future, combat aircraft, air transport, and aerial reconnaissance aircraft should be deployable from permanent airbases and decentralised locations, including former military and civil airfields and improvised runways (e. g., motorway sections).

In the air, the Armed Forces must be capable of

- intercepting, identifying, escorting and forcing the landing of manned and unmanned aircraft and combating them at long range if required;
- combating manned and unmanned enemy aircraft, cruise missiles, guided weapons and short-range missiles as part of integrated air defence;
- combating ground targets from the air precisely and with minimal collateral damage and carrying out an initial battle damage assessment after deployment;
- identifying and repelling small drones in a defined operational area;
- gathering airborne information on objects and enemy troop movements on the ground;
- transporting personnel and equipment over distances of several hundred kilometres with robust air transport;
- rapidly decentralising air assets for their force protection and operating them from decentralised and, if required, improvised locations;
- exchanging information without delay between the air operation centre and air and ground-based systems in a digital C4ISR network;
- identifying objects in the airspace primarily with semi-mobile sensors and presenting them in an recognised air picture.

4.1.4 Cyberspace and Electromagnetic Spectrum

Actions in cyberspace are crucial not only after the outbreak of hostilities but long before. Metaphorically, they serve as the first line of defence. The rapid development of the necessary technologies and systems poses a significant challenge. It is of utmost importance for the Armed Forces to monitor these developments and consistently adjust their defence strategies in response to evolving or newly emerging threats.

In the future, the Cyber Command must ensure knowledge and decision-making superiority across all domains and situations. It must be able to compromise enemy C4ISR capabilities in the cyber domain and the electromagnetic spectrum while increasing the Armed Forces' knowledge and decision-making advantage. In doing so, it must fully concentrate on the critical operational tasks of the Armed Forces and its civil partners.

In the cyber domain and the electromagnetic spectrum, in addition to procuring systems and providing networks, the key priority is acquiring and training the specialists and expertise required – both for the professional organisation and conscript units. To improve effectiveness, measures are needed to provide sufficient computing capacity and protect IT and telecommunications systems. This will increase the resilience of the Armed Forces' own systems and improve defence against cyber-attacks on military or civil infrastructure.

By increasing the number of cyber experts and creating conscript cyber specialists, the Armed Forces have taken major steps towards enhancing their capacity to act in cyberspace. They also plan to develop additional electronic warfare capabilities, namely to monitor and disrupt signal transmissions of various kinds.

In cyperspace and in the electromagnetic spectrum, the Armed Forces must be capable of

- ensuring integrated all-domain C4ISR capabilities in all situations for the benefit of various command levels and partners;
- using automation, digitalisation and data science to produce an overall military operational picture as well as specific requirements-led operational pictures;
- protecting its units, systems, infrastructure, data, information and networks in all situations;
- reconnoitre the enemy, compromising or disabling its command and control and weapon systems through active measures and rendering them incapable of action.

4.1.5 Space

The use of space is increasingly important for both civilian and military purposes. Nowadays, almost all military systems rely on satellites for positioning, time synchronisation, communication, surveillance, and weather forecasts. Satellites are advancing rapidly in technology, such as digitalising components and miniaturisation. The number of satellites in orbit has more than quadrupled over the past five years, creating new opportunities, even for smaller nations like Switzerland, as prices are decreasing.

It is intended to prepare a basic report on this domain, which is becoming increasingly crucial for the Armed Forces, similar to the existing reports on the future of air defence, ground troops and the global concept for cyber and electromagnetic capabilities.

Currently, the Armed Forces are developing capabilities to improve the use of space for future military applications. In this regard, collaboration with industry and academia is vital.

This includes high-speed, secure, and reliable reconnaissance, surveillance and telecommunications solutions. The Armed Forces also aim to improve the accuracy and availability of its geopositioning signals. This is especially important from a military perspective because various military systems and high-precision weapons increasingly use these signals. Measures and counter-measures enabling the avoidance of enemy satellite reconnaissance are also required.

In spatial space, in the future, the Armed Forces must be capable of

- producing an independent operational picture, providing information on when its units are vulnerable to monitoring and spying by orbit sensors;
- developing reconnaissance, surveillance and telecommunications capabilities;
- ensuring the accuracy and availability of geopositioning signals;
- developing measures and countermeasures that make it possible to evade enemy sensors in orbit.

4.1.6 Information Domain

Today, information can be accessed using mobile devices almost anytime and anywhere, and can be distributed worldwide at high speed. The availability of information means that the information domain plays a much more critical role in military operations than in the past. Troops constantly send messages; ultimately, every military activity and every media coverage, in whatever form, has an effect in the information domain, too. Information can be specifically used to influ-

ence enemy behaviour, for example, to deter them from an action or to deceive, divert, or mislead them.

In the information domain, a wide range of methods are available and can be used to create desired effects, from simply disseminating information to physical military actions or a combination of both.

Effects in the information domain must be increasingly considered at all levels of military planning. This necessitates a thorough understanding of the situation and clear objectives to be achieved through military actions. The goal is to execute actions that influence enemy forces and coordinate them across all command levels and domains. Desired effects can be achieved through high synchronisation and coordination, and unintended effects can be avoided.

In the information domain, the Armed Forces must be capable of

- producing an operational picture and maintaining an overview to ensure (centralised) synchronisation of all actions;
- producing communications products, centralised and de-centralised, that can be used against enemy armed forces;
- using their own and civil channels to send messages.

4.1.7 Logistics and Medical Services

A robust, effective, and sustainable logistics system is crucial for enabling the Armed Forces to fulfil their missions in a conflict. Military equipment needs to be regularly serviced so that it can be quickly deployed to the troops in the event of mobilisation. Military systems undergo significant wear and tear during combat, so damaged systems must be continually repaired and kept operational even under continuous strain. The troops must be supplied with sufficient provisions, such as fuel and ammunition, for an extended period. This necessitates a seamless logistics chain, involving national and international industry as well as civil service providers, to support both basic and operational logistics.

Due to Switzerland's small size, great importance is attached to protecting basic logistical facilities. Not only do long-range weapon systems threaten logistics infrastructure in Switzerland, but they can also quickly come within range of medium-range artillery fire. Logistics can also be impaired by sabotage and cyber-attacks. In a conflict situation, it would immediately be a priority target for enemy operations.

Medical services also play a vital role in military operations. The principle states that depending on the situation and type of injury, the fastest route for patients to the most suitable medical facility should always be chosen. Using their military and disaster medical expertise, the Armed Forces increase the resilience of the civil healthcare system with which they work closely on training and operations. Military medical data management is redundantly set up compared to digital civil systems, as the latter are at risk of failing due to technical faults.

With regard to logistics and medical services, the Armed Forces must be capable of

- protecting their infrastructure and resources, for example, through decentralisation and hardening;
- ensuring the sustainability of equipment in long-lasting operations by stockpiling spare parts and through tailored maintenance;
- enabling the logistical autonomy of the units with robust operational logistics, including scalable medical service elements;
- ensuring rapid allocation of patients to the best possible medical facilities;
- ensuring the sustainability of the units by stockpiling munitions and fuel, and this by making agreements with the industry and the civil healthcare system.

The Armed Forces' logistics and stockpiling are currently geared towards training. In case of conflict, a much greater quantity of consumables, particularly munitions, would be required. The maintenance requirements of the systems used in conflict would also increase significantly.

From a military perspective, investment in personnel, equipment, and infrastructure is advisable to transform the Armed Forces' current logistics system into a robust, resilient, and sustainable wartime logistics system. Consequently, the procurement of military equipment in the coming years will be required to close the existing gaps gradually.

The Armed Forces are currently evaluating how to reorganise logistics to meet the requirements in case of a military conflict. This involves enhancing the protection of logistics infrastructures by storing the equipment in decentralised locations, especially in underground facilities. Additionally, there is a need to improve logistical sustainability, particularly by stockpiling greater amounts of munitions, fuel, and spare parts. These concepts are currently being developed.

4.2 Organisation of the Armed Forces

The aim of strengthening the defence capability also has implications for the Armed Forces' organisational structures. The Joint Operations Command should be able to focus more heavily on performing the defence mission. The development of the doctrine also means the organisation of the land forces, in particular, must be modified. The ground forces' manoeuvre units[2] should be developed medium to long-term in the form of various categories of forces (heavy,[3] medium[4] and light[5] forces). These planning considerations have now been explored in greater depth.

The organisational development plan for the command structure of ground forces is outlined below. Specific decisions regarding which units will be reorganised, newly established, or disbanded will be made at a later time. After further

2 Unit at tactical command level, which carries out direct or indirect actions, set up based on the operational structure.

3 Heavy forces are the main combat elements of the ground forces, like the current reinforced armoured and mechanised battalions. They must be able to destroy enemy forces, defend areas and regain territory, block off axes and delay enemy forces. They must be organised in a way that enables them to achieve superiority in main effort zones.

4 Medium forces will perform similar tasks to the current infantry battalions, i. e., they carry out preliminary tasks in main effort zones in collaboration with the heavy forces (e. g., early occupation of sections of territory, keeping areas open, blocking areas off, flank protection), but also key tasks (e. g., attack in the depths of built-up terrain).

5 Light forces should have a nationwide presence in the event of heightened tensions or armed conflict, gather intelligence, prevent enemy actions and increase the population's sense of security.

findings have been obtained from field trials, a request for the necessary amendments to the relevant ordinances will be submitted to the political bodies responsible as part of the standard revision procedures.

There are four command levels within the Armed Forces: military strategic, operational, higher tactical, and tactical. The military strategic level acts as an interface between the political and operational echelon. It determines the military ends and creates favourable conditions for the development and deployment of military means to achieve the goals. It defines military strategic options as a basis for political decisions and issues guidance to the operational level.

The operational level defines which actions are to be performed to create the desired effects as part of a joint operation in order to achieve the overarching strategic military ends. In the future, the Joint Operations Command should be capable of acting all-domain, coordinating and synchronising effects across the various domains and deploying means at the operational level. The Joint Operations Command is also responsible for ensuring readiness. Only if the military units maintain a permanent basic readiness can the Armed Forces achieve the operational readiness required and perform its tasks in an operation. Regarding potential international cooperation, the Joint Operations Command requires a high degree of interoperability. This can be improved by allowing staff officers to be deployed in the command structures of NATO or neighbouring countries.

The higher tactical level carries out the orders of the operational level, coordinates the actions of the subordinate tactical units, and enhances their effectiveness. For instance, it provides support through indirect fire, ensures the mobility of units in large-scale operations, and enforces the success of subordinate troops using reserves if needed. The tactical level independently deploys its manoeuvre elements as part of the combined effort to accomplish tactical tasks, such as launching an attack, defending an area, or slowing down enemy forces.

The doctrine suggests that ground defence should be deployed within main effort zones in the future. At the higher tactical command level, two Heavy Divisions will be under the control of the Joint Operations Command instead of the three Mechanized Brigades in the current Army. The two newly formed Heavy Divisions must be able to independently carry out combined arms combat operations in a specific zone and counter threats in the lower air space (e. g., drones, helicopters, low-lying combat aircraft). With two Heavy Divisions, one division can halt an enemy advance by blocking axes in a main effort zone and defeating the enemy in combined arms combat. Simultaneously, the other division can be used to exploit enemy weaknesses, possibly with a cooperation partner.

At the tactical level, each of the two Heavy Divisions should have four manoeuvre elements in their basic structure. This includes three Armoured Battalions and one Mechanized Battalion (heavy forces). The two divisions should also have control over all combat support units needed for indirect fire support, short-range ground-based air defence, opening and closing of routes, clearing mines and other ordinances, and NBC protection. A specially tailored battalion should be in place for networked command-and-control support. Each division should also have a newly established logistics unit to provide greater autonomy. Depending on the mission and area of operation, it may be advisable to place additional units under the operational control of the Heavy Divisions, which means the operational structure may differ from the basic structure.

The organisational structure of the Air Force's airbase command units should be designed to enable the use of combat aircraft, air transport, and aerial reconnaissance planes from decentralised locations in the future.

Military contributions to support the civil authorities will remain a vital task of the Armed Forces, as well as – as part of defence – territorial (e. g., the prisoner-of-war organisation) and monitoring, protection and security tasks outside of the main effort zones. In order to perform these predominantly location-specific tasks, rescue units and infantry battalions (medium forces), as well as newly formed light forces and other territorial units, should be made available to provide support. The regional basing of units introduced under the AFDP will be continued and implemented more regularly. The newly formed light forces, in particular, should focus heavily on the local level. This will allow units to familiarise themselves with their area of operations during training and maintain contact with civil partners with whom they work closely during operations.

The Training and Education Command will continue to cover basic training, the Armed Forces College and troop personnel. As the operational units previously based in this command would now be under the control of the Joint Operations Command, the Training and Education Command can focus on its core duty. The same applies to the Armed Forces Logistics Command, which provides essential services for operational logistics, ensures logistical support outside the main effort zones and supports training activities. The Logistics Command should also ensure overarching supply management through agreements with civil logistics providers.

The Cyber Command will ensure essential capabilities for protecting the military forces and conducting operations in the cyber domain and the electromagnetic spectrum. It will provide a networked C4ISR structure and enable secure and efficient data processing to support the full range of tasks carried out by the Armed Forces on both temporary and permanent bases. Its primary focus will be on critical operational tasks of the Armed Forces and its partners.

4.3 Readiness

By implementing the AFDP, the Armed Forces have gradually increased their readiness. They have systematically set up a mobilisation system and created a new mobilisation organisation. This makes obsolete a service plan for repetition courses where conscript units are staggered over the year. The conscript units will be called up and deployed based on specific requirements and readiness.

Given the need to gear the Armed Forces consistently towards defence, the current division of roles between the professional organisation, high-readiness formations and conscript units must be reconsidered. In the future, the readiness of units should be organised differently based on their missions and tasks in various domains.

The deployment of the Armed Forces involves ongoing tasks related to situational awareness (ability to anticipate), logistics (sustainability), and networked command and control (command capability), which may need to be intensified in the event of mobilization. Additionally, maintaining air superiority must also be carried out on a permanent basis.

For supporting missions in response to dangerous events in Switzerland and its neighbouring countries, the Armed Forces must be prepared to make contributions quickly, either within hours or after a short preparation period of days. These missions utilise territorial support and light forces as well as resources in the air and for information activities. For security operations on a smaller scale, tasks are performed after a brief preparation using light and medium forces and resources in the air, as well as in the cyber, electromagnetic, and information domain nationwide. The duration of subsidiary support and security operations varies based on the event, lasting anywhere from several days to a few months.

Subsidiary support for the civil authorities to protect Swiss interests abroad is provided ad hoc or after brief preparation using high-readiness forces and with contributions from the Air Forces, the information domain and space, lasting several weeks to a few months. Humanitarian aid far from Switzerland is provided using ad hoc formations and suitable air assets – also on an ad hoc basis or after brief preparation – and lasts several weeks to a few months.

The Armed Forces must also be capable of engaging irregular actors – in close cooperation with the civil security authorities – and neutralising them before they can carry out attacks on the population and critical infrastructures. The Armed Forces should be capable of performing these tasks after preparing for days to weeks using light and medium forces, intervention forces, and operations in all areas of action lasting several months to years.

If a threat becomes severe enough for the political authorities to deploy the Armed Forces on active duty, security operations will switch to defensive combat operations. The Armed Forces must have the capability to counter the attacker's potential from a long distance. This may involve intervention forces, combat support forces, the Air Force, as well as cyber, electromagnetic, and space operations. A large-scale attack will be defended against in main effort zones, as well as coordinated support from various domains. The national defence service can last from several months to years, depending on the level of the threat.

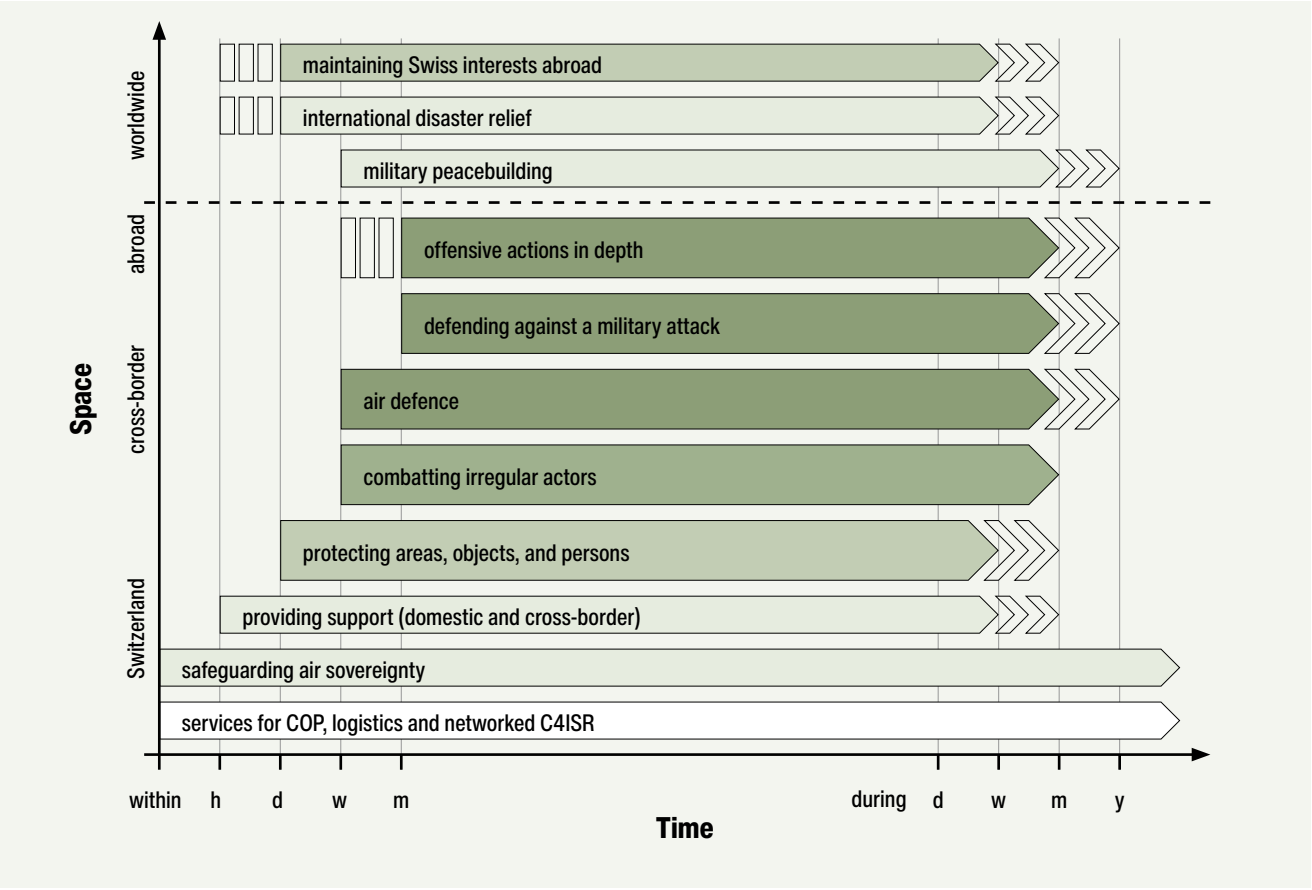


Diagram of the operational readiness model

4.4 Personnel

To ensure the effective execution of their missions, the Armed Forces require an adequate number of personnel. Well-staffed military units are crucial for enhancing defence capability.

According to the AFDP, the Armed Forces were supposed to have a manpower of 100 000 military personnel (referred to as the "required strength"), with a maximum of 140 000 conscripts obligated to perform compulsory military service (referred to as the "effective strength"). However, if recruitment and resignment levels remain constant, maintaining this effective strength in the long term will be impossible. On average, about 11 000 individuals obligated to perform military service leave the Armed Forces each year before completing their compulsory military service. Approximately 60 % of them switch to alternative civil service, while around 30 % are discharged for medical reasons.

In order to stabilise staffing, the Armed Forces have implemented various measures in communication, recruitment, retention, and advisory services. Further measures are planned and outlined in the Federal Council's report on the implementation of the AFDP. These measures primarily aim to better account for changes in the requirements of military personnel.

It will be challenging in the long term to resolve manpower problems through internal measures within the Armed Forces alone. Actions that benefit the Armed Forces often worsen the personnel situation for the civil protection service. Both systems are closely related, as individuals unfit for military service are deployed

in civil protection. The second part of the Federal Council's report on the personnel situation of the Armed Forces and civil protection includes considerations for fundamental, long-term changes to the compulsory service system. The Federal Department of Defence, Civil Protection and Sport (DDPS) and the Federal Department of Economic Affairs, Education and Research (EAER) have been tasked with exploring two potential solutions and submitting proposals to the Federal Council by the end of 2024.

Due to the current threat situation, there have been suggestions to increase the personal strength of the Armed Forces in order to enhance their defence capability. A cost-effective solution could be considering the option of forming light forces. These forces would require less annual training and shorter repetition courses. They could be deployed for shorter duty periods, thereby boosting the overall strength of the Armed Forces without extending the service period for military personnel.

However, the existing problems in manpower must be resolved first before considering an increase in the number of military personnel, which would require an amendment to legislation. It should also be noted that the Federal Council, under Article 13 of the Armed Forces Act, has the opportunity to increase the age limit of compulsory military service by up to five years in the event of active or assistance duty, which means between 30 000 and 60 000 additional conscripts could be called up. This gives the Federal Council sufficient freedom of action to increase personal strength if necessary to ensure manpower sustainability, including short-term, without having to amend acts or parliamentary ordinances, which would take longer. In all of this, however, it is important to consider that the Armed Forces personnel can only be increased if the minimum equipment required is provided.

4.5 Infrastructure

Since the mid-1990s, there has been a significant reduction in military infrastructure. The Armed Forces have been reorganized to primarily address likely security challenges, including disaster management, emergency response, and support missions in favour of civil authorities. Over the past three decades, combat, command-and-control, as well as logistics infrastructure such as barriers and underground facilities, have been relinquished, sold off, and sometimes dismantled on a large scale. Additionally, the Fortification Guard, the professional military organisation responsible for ensuring readiness of the infrastructure, has been dissolved.

Since the turn of the century, the armed forces have placed great emphasis on financial considerations. Based on a cost-effectiveness ratio, much of the military units' equipment is today centrally stored in the narrow-aisle warehouses of the five logistics centres. There, it can be managed more smoothly and cost-effectively than in decentralised, protected facilities. However, this kind of centralised, above-ground storage also directly exposes equipment to potential enemy action, for example, sabotage or shelling with direct or indirect fire.

The previous stationing concept aimed to gradually reduce the Swiss Armed Forces' real estate portfolio from a value of CHF 24 billion in 2014 to around CHF 15.5 billion, but the reduction target was later adjusted to CHF 20 billion. In recent years, the infrastructure portfolio has been significantly reduced to achieve this goal. In a report titled "Assessment of the Implementation of the Stationing

Concept," the Federal Audit Office recommended that realistic, measurable, and transparent goals be adjusted in January 2021 based on a comprehensive analysis of the future stationing concept.

Strengthening defence capability also impacts the Armed Forces' real estate portfolio. Reducing it further would present a significant risk from a military perspective. Sufficient infrastructure is required for various reasons: the logistics infrastructure should be decentralised to a greater extent and better protected. The growing threat also means more supplies, particularly munitions, must be stockpiled, increasing the need for protected, decentralised storage sites. The training infrastructure should be upgraded accordingly so that combat troops up to the battalion level can exercise operations in urban terrain and receive training on combined arms combat in live-fire exercises. There is also a vital requirement for command-and-control and combat infrastructure to ensure that the Armed Forces can carry out their tasks throughout Switzerland's territory. To meet this requirement, various existing infrastructure facilities no longer owned by the Armed Forces (disposable inventory) should be retained with graduated levels of readiness or assigned to third parties subject to conditions. Some already decommissioned infrastructure should be reactivated and upgraded to meet current and future requirements. Multiple usage of such infrastructure should be planned where possible. Synergies with industry partners, such as RUAG, should be sought for the management of logistics infrastructure.

The Armed Forces are currently evaluating whether the facilities scheduled for decommissioning can actually be decommissioned. Even if the basic features of the Armed Force's doctrine require mobile defence in main effort zones, this does not mean no value at all is attached to protected facilities. For example, the fortified mortars could still be of use in an armed conflict, if not as a means of indirect fire support, then, at least, as a military facility for other purposes, such as command posts or protected troop accommodation in the area of operation. However, it should be noted that the facilities were declassified when decommissioned, and the telecommunications networks connecting them were also dismantled.

In recent years, construction and maintenance regulations for military infrastructure have become more and more aligned with civilian provisions of the federal administration. These regulations impose greater requirements on military infrastructure, such as the installation of emergency systems and automated building control systems. As a result, the military usefulness of the Armed Forces' infrastructure has been reduced. In the future, it is important to manage command-and-control and combat infrastructures in a way that takes military factors into account and reduces the financial costs of building and maintaining facilities. In this context, the Armed Forces must be able to assume greater responsibility for the construction and operation of facilities again.

Overall, it is conceivable that a larger real estate portfolio – required due to the deteriorating security situation – would result in higher investment, operating and personnel costs.

4.6 Training

Professional and challenging military training is essential for achieving and maintaining basic readiness. Military training and education should prioritise initiative and mission command, in addition to educational content. Both basic training and leadership education, as well as repetition courses, must be consistently

aligned with the goal of strengthening defence capability. At the same time, it should meet the needs of today's conscripts accustomed to competence-oriented learning in civilian life. Encouraging independent learning and fostering flexibility in military training are essential. Furthermore, to enhance interoperability, the Armed Forces should engage in more combined exercises with other military forces and incorporate international standards to a greater extent, particularly where interfaces to potential cooperation partners exist.

4.6.1 Aligning Training to Defence

Conducting networked, multidomain operations mean high unit and leadership training requirements must be met. This is all the more important given that new technologies must be continuously incorporated into the Armed Forces.

Effective leadership training is crucial for enabling military units to carry out complex tasks in challenging environments. It is important for officers and NCOs to receive early instruction on how to conduct modern combined arms combat, which involves integrating a wide range of means from different domains at the tactical level.

Simulators can be used as part of this training, especially for unit training. The Swiss Armed Forces have extensive experience using simulators for activities like driver training, shooting, and command-and-control at the tactical level. New digital training resources offer additional opportunities, such as virtual and augmented reality and gamification. Gamification involves integrating game design principles and techniques into military training. These simulation methods enhance training efficiency, especially for unit training, and align with the learning practices of the younger generation, positively impacting motivation.

Tactical understanding can be enhanced through simulations at all command levels. However, simulations cannot fully substitute real-life military exercises. Currently, the Armed Forces have two training sites where units can practice combat operations in lightly developed terrain. At the Combat Training Centre East, which includes the Walenstadt military training area and the St. Luzisteig shooting ground, infantry units can conduct live simulation battle training up to reinforced company level. The Combat Training Centre West, which features the Bure military training area, is primarily used to train mechanised units. Additionally, there is a training village where basic combat techniques in built-up terrain can be practiced, but again only up to the reinforced company level.

Switzerland does not have a training site that accurately simulates an urban area, similar to those commonly found in the Swiss Plateau region. These sites are needed for combat exercises in urban terrain up to battalion level. The current facilities consist of villages with few streets and houses, but lack the necessary residential blocks, high-rise buildings, factories, and sewerage systems typical of urban terrain. Additionally, Switzerland does not have the opportunity to practice the coordinated use of fire and manoeuvre of mechanised units at battalion level or above.

The Swiss Armed Forces are currently evaluating whether Swiss troops can utilise training facilities in neighbouring countries under bilateral training agreements. Most neighbouring countries have the required training infrastructure. In the mid-1990s, the Swiss Armed Forces trained with the Austrian Federal Army at the Allentsteig military training site in Lower Austria to gain experience in engaging mechanised infantry. In exchange for using training facilities, the Armed

Forces could offer their modern training infrastructure to foreign partners. Several European military forces are already using simulators, such as the helicopter simulator in Emmen or the simulators at the mechanised training centre in Thun.

According to the current laws, only volunteers are permitted to participate in repetition courses abroad. Additionally, it is quite costly to move troops and supplies abroad, which limits the training opportunities available for the Swiss Armed Forces. To address this limitation, it would be advantageous to establish medium to long-term opportunities for combat units, up to battalion level, to participate in urban terrain exercises on a Swiss military training ground. Furthermore, it is recommended to create a training ground in Switzerland that would allow for live-fire exercises with combined arms and accommodate larger units than are currently feasible.

4.6.2 Modularising Basic Training

Training combat units is very demanding and requires a significant amount of time. In contrast, training for other military tasks can be completed within a shorter timeframe. This presents the opportunity to create a structured and modular approach for basic and advanced training based on their respective durations and intervals, in line with the training sylabus.

Some military roles, especially support duties, may require shorter training. Personnel in the Armed Forces who do not regularly perform unit tasks should not be mandated to undergo a three-week repetition course annually to maintain readiness. Instead, they could fulfil their military service more flexibly, on a daily basis and in accordance with the needs of the Armed Forces.

Another way of making military service more flexible would be to create a modular structure for basic training, as is already used by various roles today, such as unit medical services. These conscripts undertake the first part of basic training in their allocated unit (e. g., infantry or artillery), then attend a several-week course where they receive training in their future specialist role before returning to their original unit for the final part of basic training. This modular service should be continued and extended to other roles. Specialist training undertaken before basic training, which would be credited to the period of compulsory military service, is also being examined.

To improve flexibility in the training and service model, the Armed Forces Act should only specify a maximum duration for basic training and allow flexibility for fulfilling the rest of the military service obligation. This would allow for greater flexibility in tailoring service requirements to specific roles.

4.6.3 Improving Interoperability

International cooperation on military training is to be increased and stepped up over the coming years. The main objective is to improve interoperability in senior military leadership training and specialist units, strengthening defence capability generally.

Swiss military personnel currently participate in different training programs abroad annually. In exchange, the Swiss Armed Forces offer training to foreign participants. This includes training in areas like mountain warfare, leadership for senior NCOs, the law of armed conflict, civil/military collaboration, humanitarian mine clearance, and communications.

In line with the supplementary report to the 2021 Security Policy Report, this bilateral and multilateral training cooperation should be extended where possible. In particular, an assessment should be carried out as to whether land forces could participate in exercises of partner nations or NATO to a greater extent in future, as is already the case for units of the Air and Special Operations Forces. Combined exercises enhance interoperability and allow the Swiss Armed Forces to test operational procedures, networked C2 structures, and logistics in practice. Moreover, they can benefit from the combat experience of their partners and benchmark with other military forces. However, the Armed Forces Act imposes limitations in this area: Conscripts cannot be compelled to attend training courses abroad. Nevertheless, if foreign troops are invited to exercise in Switzerland, Swiss conscript units can train with them.

Improving interoperability is not limited to combined exercises. It can also be achieved by aligning operational procedures and C2 processes with international standards. One way to enhance interoperability, especially at the operational level, is to work directly with NATO regulations. Additionally, Professional military personnel already attend courses at the NATO school in Oberammergau and the NATO Defence College in Rome, where they learn how to apply relevant provisions during exercises. This opportunity could be utilised more in the future. Procuring and introducing new C2 systems also require adjustment to foreign military forces' terminology, products and processes. However, Switzerland's three official languages will remain the command languages of the Armed Forces.

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