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Infrastructure and connectivity: innovative measures at international, national and local levels

Since the telecommunications market was opened up in 1998, Switzerland has had a buoyant telecommunications market, which is attractive for marketing innovative services. Consequently, in recent years there has been intensive investment in expanding the networks - both fixed and mobile - so Switzerland has an excellent basis for the development of a smart society.

In April 2016, the Swiss Federal Council adopted its "Digital Switzerland" strategy, by means of which it seeks to support ongoing digitisation, which is affecting all areas of our lives, so that Switzerland can seize the resulting opportunities and face the associated challenges. In terms of the telecoms infrastructure, the government has set the goal of ensuring that high-speed broadband will be available in all Swiss municipalities by 2020.

The government has taken a technology-neutral stance and is leaving the decision regarding suitable network technology (mobile radio, fixed network or other technologies, e.g. satellite) to the market participants.

However, within the framework of the legal requirement to provide a universal service for the entire country (universal service obligation [USO]), all Swiss households are currently entitled to a minimum download speed of 2 Mbit/s, irrespective of the population density of the region in which they live. Any net deficit resulting from the provision of this universal service is to be jointly financed by all telecommunications operators. As of 1 January 2018, the minimum speed will be increased to 3 Mbit/s in order to accommodate the increasing requirements.

In recent years there have not only been developments in the universal service; there has also been much market-driven activity in the construction of optical fibre networks, the expansion of existing CATV networks, and improvements in the use of existing copper networks by means of vectoring or the introduction of G.fast solutions. A unique feature is the fact that in many Swiss towns fibre-to-the-home (FTTH) networks have been created by cooperation between electricity companies and telecommunications operators. These networks have been created in accordance with the multi-fibre approach, which means that households are connected with four optical fibres. This means that some

30% of the Swiss population can benefit from competition between independent optical fibre network providers and can use the most modern communications services.

In order to support local initiatives, the government has cooperated with the private sector, cantons and cities to publish guidelines on best practice for network construction. The government also maintains an interactive online map which provides information on the existing broadband provision for the respective households and villages.

The main interest in relation to mobile radio is the development of 5G. In this respect, in a report requested by parliament, the government outlined in 2015 the basic conditions in relation to telecommunications legislation, building regulations and environmental standards for electromagnetic waves, which are important for the further expansion of the mobile networks. As a result, there is currently a debate on a change to the Swiss Telecommunications Act, the main focus of which would be to establish the legal basis for spectrum trading and the funding of nationwide monitoring of electromagnetic waves.

In Switzerland, the responsibility for the allocation of frequencies for 5G lies with the independent Federal Communications Commission (ComCom). The allocation currently includes frequencies in the 700 MHz, 1.4 GHz and 3.4 - 3.8 GHz ranges and presupposes a transparent and comprehensive process in which interested parties at home and abroad can participate. The allocation process must meet the most stringent requirements for transparency and the rule of law in order to create complete trust among the participants and thereby enable the necessary investment for wide-ranging expansion of the new mobile radio networks.

With these measures, Switzerland wishes to continue on its path of digitisation and adapt its already well-developed telecoms infrastructure to the very latest technologies.

Consumer access to ICT services and devices

As part of the legal requirement to ensure the provision of a universal service for the entire country (universal service obligation [USO]), Switzerland will tread new ground in 2018 with the introduction of compulsory access to telecommunications (by way of sign language via video telephony) for persons with impaired hearing. This service must be offered at defined operating hours in all three official languages of Switzerland (French, German and Italian) and is free for persons with impaired hearing. As mentioned above, any net deficit resulting from the provision of this universal service is to be jointly financed by all telecommunications operators.

New ICT services are very often accessed via the internet. To ensure that internet domains with a connection to Switzerland are reliable and protected, for some time now a legal basis for protection against malware and phishing has been established which is applicable and used for internet addresses with the country code .ch. Since 2015, Switzerland has also operated the generic top-level domain .swiss, which may only be allocated to companies and organisations with a clear connection to Switzerland. Internet addresses with the suffix .ch as well as .swiss should comply with the highest security standards for protection against cybercrime.

With these measures, Switzerland wishes to continue on its path of digitisation, ensure a high level of quality and security for consumers, increase the level of consumer trust in the internet and improve the services offered on the internet.