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| **Background:** On the way to achieving “Digital Kazakhstan 2017-2022” state programme goal and responding to the digital divide, the new DigitEL 2025 concept was developed and adopted by the Ministry of digital development, innovations and aerospace industry (MDDIAI). One of the main directions of the concept is to create enabling learning environment by ensuring availability of up-to-date computer technologies, broadband internet connectivity for all schools and households including villages with more than 250 habitants, with unlimited traffic for comfortable use. The development of cloud technologies will provide many opportunities for building integrated online platforms to assist in learning, adapting textbooks into digital format, and deliver online lessons, digital skills from primary to tertiary level students. A key direction for transforming the approaches to the provision of services and interaction of the state with citizens and business will be the transition to the principles of open architecture (Open API), in which a qualitatively new level of cooperation with the commercial sector will be built. This will allow the efficient use of resources, concentrating on digital infrastructure, giving the "last mile" for the provision of public services to the non-governmental and business community. As a result of UNICEF’s work on DPG promotion and scale up, the DigitEL’s main principle for creation of new digital solutions is in use of open information storage technologies (open source). This will help reducing license costs and have the flexibility to develop systems and ensure security of individual storage of data.Based on the recent updates from the Ministry of Digital Development, Innovations and Aerospace industry[[1]](#footnote-2), over 60,000 km of fiber optics will be laid in more than 3,000 villages, and 504 remote settlements will be connected via satellites. -The population and businesses will have access to high-speed internet of at least 100 Mbps. -Outdated ADSL technology will be replaced with modern high-speed internet access technologies. -The internet speed in over 3,400 schools will be increased, and this has already been done in more than 3,000 schools. -By 2027, 17,000 km of national and regional roads will be covered by mobile internet (4,000 km in 2024, 4,000 km in 2025, 4,500 km in 2026, and 4,500 km in 2027). -In four years, cities of national importance will be covered by 5G networks at 75%, and regional centers will be covered at 60%. -Amendments to the law are needed to further improve the quality of the internet in the country. -As a result of the national project, the level of broadband internet access in households will be 100% by 2027. Last mile connectivity will be arranged with the support from the World Bank grants to small and medium business mobile operators. UNICEF Kazakhstan was a leading organization in the Giga initiative in Central Asia. A national level Giga steering committee was established in 2021 and a total of 7,400 schools were mapped for Project Connect to show their connectivity status. Under the joint UNICEF and Turkestan region workplan, 38 rural schools were connected to broadband internet covering some 20,000 children. The country office’s feasibility study presented the best technical and economically sustainable solutions for school connectivity in Kazakhstan. In support of the Giga project roll out in Kazakhstan, UNICEF Kazakhstan explores satellite-based solutions, but also development or improvement of the existing technical solution for redistribution of internet connection, using frontier technologies’ and testing it using the regulatory “sandbox” within the Ministry of Digital Development, Innovations and Aerospace industry and businesses. The DPG pathfinding role in Kazakhstan will be sustained and accelerated. In this regard a number of steps has been developed in the DPG scale up concept, including creation of a government function to continuously champion and accelerate DPGs in the country, enhancing government’s efforts to certify and deploy DPGs Models[[2]](#footnote-3), and increasing girls’ representation in STEAM and DPG acceleration in Kazakhstan, support to existing technical solution for redistribution of internet connection as DPG – sustainable business models. The country office continues to support scale up and sustaining of the UniSat+ nano-satellite programme for girls, gamification and environment studies data analytics. The programme has successfully reached over 3,000 girls through its on-line and off-line components, initiated development of games for selected modules and learning hubs in the regions. The next steps include co-creation with girls and testing of GameDev on-line course, support its digitalization, finalizing of the gamified modules, elaborate on environmental studies data analytics application in the next cohort of girl participants of the UniSat+ programme. The space industry community could become another partner in setting up a youth engagement in space technologies, modeling STEAM programmes for changing of mindsets, societal models, and practical solutions applied on Earth in order to accomplish the SDGs, Common Agenda and to advance responsive to environment and climate change space sector, wellbeing of children on the Earth and beyond. Space and climate change education will be also explored to build on the practices of the Mars group. In Mars group, youth aged 13-18 from around the world simulate future scenarios that humans might experience if living on Mars in the year 2075+. As members of teams assembled to address specific issues within and across communities in the form of narrative stories, they collaborate with each other, and come together for convenings where cross-planetary issues are tackled in real-time. Team members examine how life on Mars might evolve, how we might do things differently, better, and how new mindsets, societal models, and practical solutions can be applied on Earth in order to accomplish the UN SDGs, Common Agenda and to advance a more democratic and socially responsive space sector. Participants are offered pathways to deepen their learning by: undertaking additional challenges, by developing new Mars communities, services, businesses; by applying their new mindsets, ideas, and models in the real world through partners, advocacy, incubation; and by connecting to internships and mentorships. This will be explored by conducting at least one hackathon on data science and space with children 14-17 age in partnership with space industry communities. |

1. <https://www.zakon.kz/6391502-musin-poobeshchal-uluchshenie-kachestva-interneta-v-etom-godu.html> [↑](#footnote-ref-2)
2. DPG models are identified and selected products for vetting and deployment to become DPG and serving as an example for other product developers to meet DPGA standards. [↑](#footnote-ref-3)