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Technology development for long-lived Venus landers.

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Simultaneously with many successful lander missions on Venus in 1972-1985 Soviet Union began develop long-lived lander on surface of Venus. The basic problem were extreme conditions on a surface: P=10MPa, T=500 C . Then operations have been stopped and have renewed in 2006 already in new Russia. Mission "VENERA (VENUS) - D" is included into the Federal space program of Russia on 2006 - 2015 with launch in 2016. To this date Russia alone can't create a reliable electronics for 500 C, but we have got examples GaN electronics for 350 C. Cooling technology with boiling water is offered for interior devices of lander at pressure 10 MPa and temperature 310 C.

As the power source of an electronics we use high-temperature galvanic cells on the base of Li4Si [LiCl, KCl, LiF] FeS2 which are released in Russia as reserve power sources. They are capable to work directly on a surface of Venus without any thermal protection.

At lander two kinds of vacuum technology can be used: 1) in multilayer (MLI) thermal blanket for lander, 2) in electro-vacuum devices, for example transmitter . For creation and maintenance of vacuum at temperature 400-500 C: chemical gas absorbers (**getter** materials) are used, they actively absorb both carbon dioxide and nitrogen .