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The scientific data acquisition system of the GAMMA-400 space project

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The description of scientific data acquisition system (SDAS) designed by SRISA for the GAMMA-400 space project is presented. We consider the problem of different level electronics unification: the set of reliable fault-tolerant integrated circuits fabricated on Silicon-on-Insulator (SOI) CMOS technology; the high-speed interfaces and reliable modules used in the space instruments. The characteristics of reliable fault-tolerant very large scale integration (VLSI) technology designed by SRISA for the developing of computation systems for space applications are considered. The scalable net structure of SDAS based on Serial RapidIO and SpaceWire interfaces including real-time operating system BAGET is described too.

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