The United Institute of Informatics Problems of the National Academy of Sciences of Belarus (UIIP NASB) is the leading Belarusian institution for carrying out fundamental and applied research in the fields of information technology, computer science, applied mathematics, computer aided design and some other attached fields. The UIIP staff (on 01.01.2008) is over 400 persons including 264 research workers: 2 Corresponding member of Belarusian Academy of Sciences, 17 scientists with DSc degree and 69 - with PhD degree. The UIIP priority research directions are the next: Computer aided design (CAD/CAM/CAE); Processing and recognition of signals, images and speech; Operation research and discrete optimization; Decision making in extreme situation; Bio and medical informatics, ergonomics; Geoinformation systems; Computer networks and telematics; Input-output of video information; Information security; Supercomputers, Grid and applications.

In 1995 under support of ISF, NORDUNET, Eurasia Foundation, NATO Scientific Committee and EC, the UIIP NASB (the former Institute of Engineering Cybernetics (IEC) of the National Academy of Sciences of Belarus till 2002) has organized in Minsk the Networking Workshop to develop strategy for the R&D Computer Network development in Belarus. In 1995 the IEC has got for R&D community of Belarus a link to Internet via Beltelecom FO channels. In 1996 on the basis of IEC network departments the National Center for Information Resources and Technologies (NCIRT) has been formed. In May 2007 the UIIP NASB is reorganized by the decision of the Presidium of the National Academy of Sciences of Belarus in the form of inclusion in the structure of the NCIRT.

The Computer Network of the National Academy of Sciences of Belarus (BASNET) is one of the first networks created in the Republic of Belarus to exchange data between various research organisations and scientific groups. Since 1997 BASNET together with the Belarusian State University networks “BSUNet” and “NIKS” and Ministry of Education network UNIBEL have formed the Unified Research and Informational Computer Network (URICON) of the Republic of Belarus.

Until now BASNET is the most advanced and dynamically developing research computer network in the Republic of Belarus. BASNET provides international connectivity to others Belarusian NRENs and proposes various Internet services in all regional cities of Belarus - Brest, Gomel, Grodno, Mogilev, Vitebsk and capital – Minsk. Since May, 2007 BASNET is administrated by the UIIP NASB, who is recognized as Belarus NREN provider to unite research, cultural, educational and high-tech IT-institutions and IT-research laboratories in Belarus.

In 2003 the UIIP NASB (as the NCIRT) on behalf of URICON started to report to Trans-European Association of Scientific Educational Networks (TERENA) as a National Research Educational Network (NREN) of the Republic of Belarus.

In the beginning of 2004 the Policy Committee (PC) of GEANT kindly allowed Belarusian NREN BASNET to link to GEANT network through Polish NREN PIONIER. Link to PIONIER was officially established on the 16th of August, 2004. Connection was organized through PIONIER node in Poznan Supercomputing and Networking Center (PSNC) through the channel rented at Polish PTT "TPSA" and PTT "Beltelecom" (Belarus) with bandwidth of 34 Mbps. In 2006 the leased channel speed was increased to 155 Mbps. Transit connectivity between GEANT and Belarusian NREN is guaranteed by the agreement with PSNC and GEANT PC permission. Connection to GEANT and PIONIER has allowed to double the volume of the external traffic of the scientific-educational organizations of
Belarus and has considerably increased quality of access to global computer networks as well as has opened new opportunities for the international cooperation in scientific and educational spheres.

Computer network BASNET unites 46 research institutions of the National Academy of Sciences of Belarus and over 60 institutions and organizations of others Ministries - State Committee of Science and Technologies, Ministry of Agriculture, Ministry of Industry, State Committee of Chernobyl, Ministry of Health, National Library, Presidential Library, Republican Scientific and Technical Library, Central Scientific Library of the National Academy of Sciences of Belarus, Belarusian Attestation Committee, Fund of Fundamental Research, etc.

BASNET provides all range of different services starting from dial-up and ADSL connections to wireless connections and leased capacity with various speeds. They provide e-mail, hosting, VPN, DNS services, best effort data, depository and e-catalogue for Belarus libraries. Important aspect of functioning of BASNET is that network users are paying for the Internet access only. Network interaction with all organizations, connected to scientific information computer network of Republic Belarus and BASNET network is ensured on free of charge basis and rate of data exchange is limited by the physical link speed only.

BASNET is based on 20 basic network nodes, 15 of which are connected by high-velocity fiber-optic channels (about 40 km) transmitting data throughout the network with the velocity of 100-1000 Mbps. The UIIP NASB rent from Beltelecom only optics cable links to Poland (155 Mbps, GEANT node in Poznan) and to the regional BASNET nodes (2 Mbps, Grodno, Brest, Mogilev, Vitebsk, Gomel), but the UIIP NASB has and works using own equipments and metropolitan FO channels for BASNET.

BASNET is a member of the European Center of Internet registration, it possesses the Local Internet Registry Status, has its own IP-addresses space, support 6 second level domains: “bas-net.by”, “culture.by”, “basnet.by”, “org.by”, “from.by”, “nren.by”.

The UIIP NASB is the Belarusian coordinator and principal executor of three Russian-Belarusian joint supercomputer programs: SKIF (Development and creation of supercomputer family SKIF, 2000-2004); TRIADA (Development of applications based on SKIF supercomputers, 2005-2008) and SKIF-Grid (Development of Grid technologies and new generation SKIF supercomputers, 2007-2010). The most important result of the SKIF program is the State Supercomputer Multi-Access Center with remote access to computing resources that was organized in the UIIP NASB. It includes the cluster supercomputers SKIF K-500 (128 Intel Xeon, storage – 0,8 TB) and SKIF K-1000 (576 AMD Opteron, storage – 9,5 TB).

Nowadays to fulfill the main aims of the project BalticGrid-II as the EGEE segment (# 223807 of FP7-INFRASTRUCTURES-2007-2 Call) the UIIP NASB has the plan to achieve in 2-3 years 1-10 Gbps to GEANT and 1-2 Gbps to regional nodes according to the national SKIF-Grid program and based on PORTA OPTICA STUDY project results. At the end of the last year 2007 it was organized the first tender to buy equipments for the BASNET modernization to provide not less 10 Gbps in all this directions.

The first equipment delivery contract was executed the last year December and the modernization of interaction node of network BASNET with external networks for a possibility of traffic management up to 10 Gbps will be completed up to the middle 2008.