DNS, file, other) and PC computers, which use Linux/Unix operating system. Public IP addresses are used throughout this network. The second subnetwork connects Windows PCs. This network uses private IP addresses served by a dedicated DHCP server. The IP traffic is routed between the subnets via a router with source network address Interestingly enough the partitioning of the network was done in software, not in hardware. All modern manageable switches have virtual lan (VLAN) capabilities - the 802.1Q standard. A switch can be divided into a number of smaller (virtual) switches. The beauty of the 802.1Q technology is that it allows overlapping of virtual switches i.e. one physical port can connect to different logical networks yet the networks are separate. Also in 2007 a few wireless access points (AP) were installed throughout the Laboratory. The AP are 802.10 b/g compliant and serve the following areas: entrance hall, both lecture rooms A and B, users' hall, the whole second floor of the B building and the hotel. For security reasons, access to the wireless network is protected by WPA encryption, pass-phrases, and MAC address filtering. Anyone whishing to use the network should contact the network administrators at HIL beforehand, to obtain necessary access codes.

7. New ECR ion source and injection line

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During the whole second half of the year procedures of tender for purchase of the new ECR ion source went on. At the end of the year a contractor was chosen and both sides reached an agreement in the matter of contract conditions. On 11 January 2008 the contract and Memorandum of Understanding between Heavy Ion Laboratory, Warsaw University and PANTECHNIK S.A. were signed. The contract execution is fixed for 12 November 2008. The scope of the order is the fabrication and factory acceptance test of the items listed below:

1. SUPERNANOGAN ECR,
2. RF amplifier 400W-14.5 GHz,
3. Chariot for the source,
4. Packing, transportation and insurance CIP HIL,
5. Standard factory test with gases (O, Ar, Xe) and one metallic ion (high temperature oven).

According to the conditions of collaboration described in the Memorandum of Understanding, a complementary order of items necessary to the correct operation and exploitation of the SUPERNANOGAN ECR will be placed with PANTECHNIK when funds allow it. HIL scientists will be instructed in the ion source technique and operations both during the construction and assembly periods. The planned collaboration includes also involvement of PANTECHNIK in the calculations and technical projects of the injection line, which are going to be prepared at HIL. Fabrication of some mechanical parts by the HIL workshop on the basis of PANTECHNIK project drawings is considered.

The ion species, which will be delivered by the new ECR ion source, together with available currents (in eμA) are listed in Table 1.

Table 1. Ion currents [eμA] available from the new ECR ion source.

Ion/charge	+1	+2	+4	+6	+8	+9	+11	+14	+20	+25	+26	+27	+30	+31	+32
H	2000														
He	2000	1000													
C	500	350	200	3											
N	1000	300	100	10											
O	1000	400	300	200											
Ne	1000	300	200	160	25										
Ar	1000	350	250	200	200	90	30	1							
Kr	1000						25	15							
Ag			250	250	200	90	30		4						
Xe	500				220				3						
Ta									4	0.8					
Au											10	6	1	0.7	0.2
Pb									10	5	3	1			

8. The Warsaw PET Project – Radiopharmaceuticals Production Centre

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The information on the Warsaw Consortium for PET Collaboration (WCPC), the Warsaw PET Project and its Radiopharmaceuticals Production Centre (RPC) was already presented in previous Annual Reports of HIL [1,2]. During 2007 a substantial progress in the administrative, legal and financial preparation of RPC realization in the HIL building was achieved.

In 2007 we have finalized long negotiations with International Atomic Energy Agency (IAEA), related to the building adaptation contract. The Amendment 2 to our Collaboration Agreement settling the encountered problems was signed on 5 September.

Last year our activity also resulted in a substantial increase of funds available for the RPC equipment purchase. In July the subvention for the acquirement of the Quality Control units was allocated to the Laboratory by the Ministry of Health. One month later the Warsaw University signed a contract with the Ministry of Science and Higher Education allowing us, using European funds, to buy a supplementary equipment for the production of radiopharmaceuticals used in the research programme.

Finally, on 23 October two contracts for the realization of a turnkey project were signed in the Agency offices by the Rector of the Warsaw University between

a) Warsaw University and GE Healthcare Company for the building adaptation;
b) Warsaw University, IAEA and GE Healthcare Company for the supply of the equipment (including the 16.5 MeV proton cyclotron).

After the contract signature the Contractor and its Subcontractors prepared and discussed with Laboratory representatives the layout of the RPC, including the calculation and design of the cyclotron protection walls. Recently (19-22 February 2008) the preliminary version