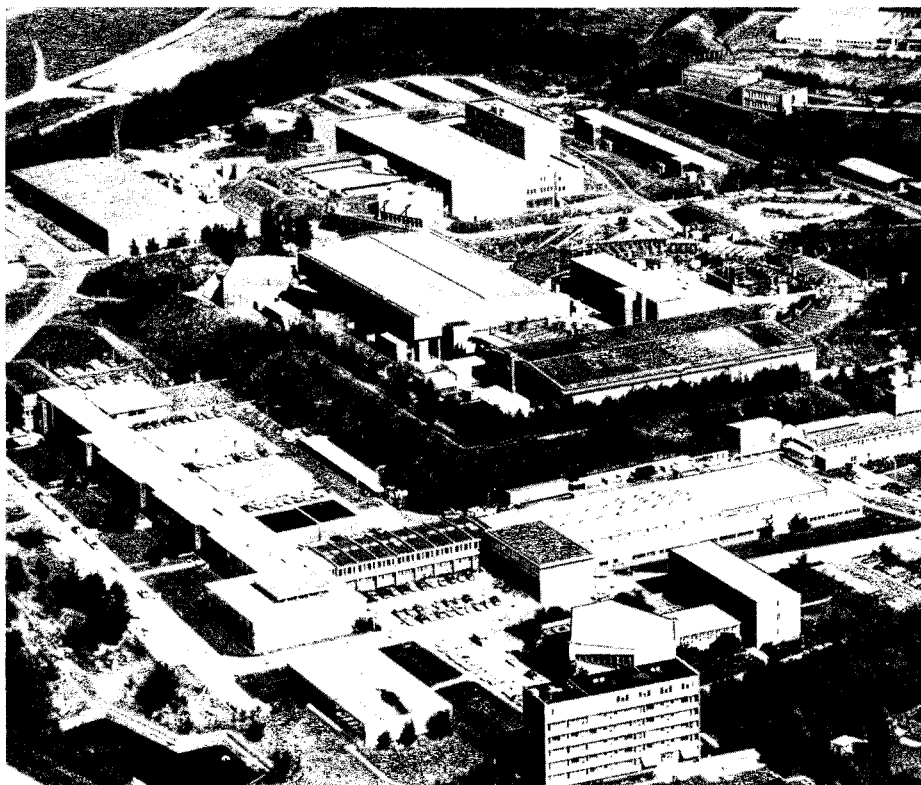




*Recent aerial view of the DESY Laboratory. Top centre is the large experimental hall which spans over both interaction regions in the straight sections of the oval shaped storage rings. The long low building of the injector is to its right and a little below to the right it is possible to distinguish the circular shape of the electron synchrotron.*

*(Photo DESY)*

collide them with an electron beam. It has been shown that very interesting electron-proton scattering and photo-production experiments can be done even at the comparatively low energies of 3.5 GeV or, later, 5 GeV. A programme to accelerate protons at DESY is under way and is expected to result in a proton beam ready to be injected into DORIS by the end of 1974. In addition to high energy physics experiments, it is intended to do a series of machine physics experiments to understand more about the behaviour of a proton beam colliding with an intense electron beam. Those studies are essential for the design of large electron-proton storage rings which are now being studied on both sides of the Atlantic.

## CAMAC Symposium

From 4-6 December 1973, an International Symposium on 'Camac in real-time computer applications' was held at Luxembourg. It was organized by the Commission of the European Communities in collaboration with the ESONE (European Standard for Nuclear Electronics) Committee on which CERN is represented.

CAMAC is the set of rules for the design and use of modular electronic data-handling equipment which was evolved some five years ago by

ESONE (see vol. 8, page 314). It has brought standardization into the electronics of data-handling in nuclear and high energy physics Laboratories in a way which has proved very beneficial both to users of electronic equipment and to manufacturers.

The CEC are seriously considering extending use of the system into other fields and a major aim of the Symposium was to spread knowledge of CAMAC to other disciplines. The opening lectures were therefore an introduction to CAMAC followed by papers on its use in a variety of situations.

Applications have already been found in medical and health services and in industry (for measurement and control). There were papers given on these subjects. Many other areas of application can be envisaged — telecommunications, traffic control, environmental monitoring, astronomy, chemical industry, etc. — and it is hoped that, via some of the 500 participants at the Symposium, knowledge of the CAMAC system will reach such fields which have not yet standardised their electronic equipment.

A General Assembly of the ESONE Committee was held following the Symposium and took further decisions on the extension of CAMAC. A description of a serial CAMAC system (resulting from a NIM/ESONE study) was accepted and the detailed specification will now be worked out. A

further report on analog signals was also accepted and a related study on signals for industrial and control use will be implemented. The use of CAMAC in industry is a topic of growing importance and raises some practical liaison problems and the question of ESONE's range of activities in the future. •

Dr. H. Meyer of Euratom was elected Chairman of the ESONE Committee for 1973-74 and will preside over the next General Assembly in Warsaw in September. Any repeat of the Symposium awaits the results of a survey carried out during the Luxembourg meeting.

## CORNELL Superconducting r. f. cavity development

In raising the energy of an electron synchrotron, account has to be taken of the severe radiation loss which increases with the fourth power of the beam energy. Making up this loss by r.f. cavities can be a very expensive business. This is why the staff of the Cornell 12 GeV synchrotron are attempting to develop superconducting accelerating cavities that will be suitable for use in an electron synchrotron environment.

The cavities could make it possible to operate the accelerator at higher energies with the same input power, or to operate at present energies with considerable savings in electric power costs. For example, the r.f. power into a 1 mA electron beam at 12 GeV in the Cornell synchrotron is about 20 kW, while the r.f. power delivered to the present cavities is about 220 kW. With superconducting cavities, 220 kW would permit acceleration of a 1 mA beam to 17 GeV. Alternatively, one could still operate at 12 GeV but