FACTS ABOUT ATLAS

Data word

48 bits or 8 characters of 6 bits.

Storage

Main store	Cores	32,768 words
	Magnetic drums	98,304 words
Fixed store		8,192 words
Subsidiary working store		1,024 words

Magnetic tape

This installation will have 13–15 Ampex tape units.

Speed

Atlas I can execute on the average 400,000 basic instructions per second; about 60 times more than the Mercury computer. (The last five years' work on Mercury could be repeated in 3 weeks on Atlas.)

Input and output

Input may be by 5, 7 or 8 channel paper tape (4 tape readers provided) or 80 column punched cards (2 card readers). Output may be on line printer (2 Anelex printers), paper tape (3 tape punches) or punched cards (1 card punch). Input and output will also be possible via data links to other locations, e.g. a fast link to Imperial College, slower links to Queen Mary College, King's College, University College and probably other centres.

Other peripheral units

3 teleprinters provide information to engineers and operators.

Parallel operation

Under the action of the 'Supervisor' (a program stored permanently in the machine) all input and output devices can be in action simultaneously, and up to 8 magnetic tape units. The Supervisor assembles programs, controls the order of their execution, provides monitoring information to the operators and all essential logging data.

FACTS ABOUT ATLAS

Programming languages

The following languages may be accepted: Mercury Autocode (CHLF 3); Extended Mercury Autocode (EMA); Algol 60; Fortran; Combined Programming Language (CPL); Lunacode; Atlas Commercial Language (ACL); Atlas Basic Language (ABL).

Power and cooling

The Atlas installation has a loading of up to 220 KVA, and the cooling system up to 320 KVA. Units in the basement are water-cooled, the total capacity of the cooling system being 90 tons of refrigeration. Excess heat is dispersed through the cooling tower.

THE ATLAS BUILDING

Floor area (on two levels) about 7,500 sq. ft.

Begun 12 August 1962
Completed 15 July 1963

Architects: Messrs Clutton
Main Contractor: Richard Costain
Consultants: Oscar Faber & Partners

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Institute of Computer Science
Director: Professor R. A. Buckingham
Secretary: Miss Joan A. Spencer

Atlas Computing Service
Manager: Dr A. A. Robinson
Enquiries: EUSton 9651

UNIVERSITY OF LONDON
INSTITUTE OF COMPUTER SCIENCE

44 GORDON SQUARE · W C 1

DEVELOPMENT OF THE INSTITUTE

In 1957 the University of London set up an organisation to provide a central computing service to members of the University, to pursue research in the theory and use of computers, and to offer education and training in their application. Thus the University of London Computer Unit came into being and late in 1958 was equipped with a Ferranti Mercury computer.

Within 18 months the load on this machine called for three shifts a day, and it was evident that a larger computer would soon be needed to deal both with current work and the many problems in the offing for which Mercury was inadequate. In August 1961, aided by a contribution of £500,000 from the University Grants Committee, and a generous arrangement with the British Petroleum Trading Company, the University was able to order from Ferranti Ltd. an Atlas I system, the most powerful computer then under construction in Britain. The greater part of this system was delivered in late 1963, within a month of the date forecast, and after a period of commissioning the computer was brought into regular use in May 1964.

Since 1957 the Unit has been able to play an increasingly important part in the life of the University, and in recognition of its teaching and research activities the Senate, on 25 March 1964, approved a change of status whereby the Computer Unit became the *Institute of Computer Science*. The Institute is now equipped to take a place among the foremost computing laboratories of the world, and to provide a centre of teaching and research in computer science open to qualified persons from all countries. Equally important is the opportunity offered to the Institute and industrial users of computers to mingle and derive mutual benefit from an interchange of knowledge and experience.

PREMISES

The Computer Unit originally occupied 44 Gordon Square and had use of a small part of the adjacent house, with a building erected in the back gardens to accommodate the Mercury computer. The Institute now occupies four houses in Gordon Square and will move into a fifth by 1965. To provide space for the Atlas installation, Mercury was moved in July 1962 to a temporary annexe in Mortimer Market; the old computer building was demolished and a new two-storey building spanning the rear of four houses took its place by mid-1963.

STAFF

The staff of the Institute consists of a nucleus of permanent academic members, together with research assistants, programming and other technical assistants, and the essential administrative, clerical and maintenance personnel. The many and varied users call for a wide range of talent and interests in the academic staff, and research experience in fields other than in numerical analysis or programming is a great asset. The academic appointments include a Professor of Computing Science, a part-time Professor of Statistics and two Readers, one in Information Processing and one in Computer Science. Research fellowships are available and post-doctoral fellows from other centres are welcomed.

TEACHING

The early teaching activities of the Unit were mainly the provision of programming courses, and these continue to be held frequently. More important are the lecture courses now given in numerical techniques, the theory and use of computers, and more advanced aspects of programming, data processing and operational research. These lectures which are run in collaboration with the Department of Extra-Mural Studies of the University, cover the syllabus prescribed for the Academic Postgraduate Diplomas in Numerical Analysis and in Computer Science. Regular seminars open to all who are interested are held on advanced topics and occasional colloquia and symposia.

RESEARCH

Current research activities of the Institute include numerical analysis particularly in differential equations and matrix methods, statistical and survey analysis, the development of programming languages, problems of simulation and scheduling, and the application of computers to molecular structure and to typesetting. A group will soon be set up to study the design and use of more advanced computer systems.

SERVICE

The Computer Unit has always accepted as a major responsibility the giving of technical and programming advice to university users. This the Institute will continue to do as part of its teaching function, collaborating with computing centres in the larger colleges. It helps to ensure the use of the best techniques and the training of efficient programmers. The Institute also provides a valuable training ground for programming assistants.

The number of university projects brought to the computer since the beginning is rapidly approaching 1,500 and over 300 new projects having arisen in the last twelve months. The number of University departments using the Institute has risen from 32 in 1959 to more than 80 at the present time. In addition its facilities have been used by other universities and colleges, research institutes and commercial organisations. These facilities will be enhanced by the installation of several direct links with other parts of the University, making possible the use of Atlas by undergraduates as well as graduate students.

ATLAS COMPUTING SERVICE

Associated with the Institute is the University of London Atlas Computing Service, operated by a private company set up and owned by the University, with a staff of experienced consultants, analysts and programmers, and a strong team in charge of the operation of Atlas.

A full range of computing services for industry, commerce and government is provided on a commercial basis, using the Atlas computer. The service is intended to make a substantial contribution towards the cost of Atlas and to make more readily available to commercial users techniques recently developed in the University departments.