Office automation:
AES pioneers field trials

Starting in May 1984, a year-long field trial in office automation began at the Atmospheric Environment Service. Two parts of AES are involved in the project — AABD (Finance and Administration Branch) and APDG (Policy, Planning and Assessment Directorate).

Twenty-nine members of AABD and APDG staff are participating — 13 in Hull and 16 in Downsview. The Hull team is coordinated by Bob Jones and the Downsview team by Joe Shaykewich.

The automated system to be tested — in the vocabulary of computer technology — is called an integrated-communications and shared information-storage and retrieval network. The components of the network are: — work stations, that is, video screens and keyboards with full word processing capability; a central processing unit (CPU) which is a large microcomputer; and printers. The Hull team is equipped with 11 work stations, one Spectrix computer and three printers. Downsview is equipped with 13 work stations, a similar Spectrix CPU, and three printers.

Basically, each work station is able to contact, "talk to" and exchange information with any other work station, whether in Downsview or in Hull. Each work station is able to store or retrieve information on a central disk storage device. Information of a restricted kind can be "locked in", that is, users will not have access to it unless they have the "key" (a keyboard entry formula or password).

Some simple and immediate uses of the network are clear. Standard memos, financial reports, and documents of all kinds can be exchanged and stored. Annual reports stored one year can be retrieved next year and simply updated by word processing. But the full potential of the network remains for the field trial to find out.

Behind the field trial lies an ambitious and far-sighted pilot project. At the head of this project is John Smith-Windsor of Information Technology and Management Systems Branch (ITMS) of the corporate level in Ottawa. The field trial, says Smith-Windsor, "is intended to inform the department of the effects of technology on individuals, to promote the attainment of departmental goals and to achieve increased productivity at the individual and organizational levels."

Brian Adamson of Program Development and Evaluation Branch (left) and Joe Shaykewich, acting chief Administration Division receive instruction during the AES-OCRA field trials from Geraldine Mooney.

"The field trial is an experiment," Smith-Windsor stresses. "We hope it will provide the beginning of a department-wide system. However, we don't know how it will turn out. At the very least we will learn some valuable lessons."

Participants will be regularly interviewed and asked about system performance, user acceptance, human factors, organizational impact, productivity enhancement, and methodology. System components are being leased from OCRA Communications Inc., originally a consortium of Canadian communications-industry companies. The AES-OCRA field trial is a truly pioneer project. Not until the field trial is over and its history analyzed will the results become clear. "We are not committed to OCRA beyond the terms of the field trial," says Smith-Windsor. "If we don't like the results, we can start afresh in a new direction."

The field trial is being conducted in real conditions. Some of the participants have had advanced training in computer technology. Some have had a little. But the majority have only the usual office skills. Much will depend on how the average office worker reacts to the new technology.

"I think at first there will be a honeymoon period," says Joe Shaykewich. "Probably a lull in activity, or period of deflation, will follow as the novelty wears off. But as the participants become skilled in using the technology, acceptance and productivity will likely pick up and, we hope, the trial will end on a favourable note."

Meanwhile Mr. Smith-Windsor, says half jokingly, "Don't throw your typewriters out — yet!"

An OCRA terminal awaits installation at the AES Downsview Building.

AES and the future of office automation

DOE's Information Technology and Management Systems branch has a pilot project linked with the federal government's Office Communications Systems. Begun in 1980 by the departments of Communications and of Industry, Trade and Commerce the program sought to help Canadian companies "develop the industrial capacity to supply the growing national and international markets for integrated electronics office products."

Along with the AES-OCRA field trial, similar field trials are being conducted in National Parks and in the Environmental Protection Service. Leaving the other two field trials aside, what does John Smith-Windsor's pilot project have in store for AES in the future?

Joe Boll, Director of Finance and Administration (AABD) says — "We are five to ten years away from a highly automated and integrated department-wide office of the future."

But, what will the office of the future look like? On the department-wide level, the network (system of systems) will stretch from the Department level, down into the Branches and Directorates, and into the group or individual level. Or inversely, the field trial's 24 work station system will grow and spread outward and upward until the whole of Environment Canada has been brought into the technology.

At the Department level, there will be a corporate computer system managing large corporate data bases such as finance and personnel systems. It will be able to exchange information with computer systems anywhere in Canada.

At the Branch and Directorate level, the computer systems will have access to the corporate computer while, at the same time, managing their own local information.

At the group (individual) level, cluster controllers will compute and switch messages within the group, provide local disk storage and provide outlets to computer networks at a higher level.

The work station of the future will feature text processing, voice annotation of documents, messaging (combined voice and text), spread sheets and modelling with graphics.

Other interesting features will include the following: automatic dialling, hands free telephone operation, and "the ability to digitize voice so it can be stored and edited." Printers will be of three kinds: quality (like the IBM Selectric typewriters), draft, and reproducers of screen graphics. Word processors will be integrated into the system and will have a microcomputer dedicated to that task but linked to all other work stations. There will be two-way video — to see as well as to hear each other; Videotex to transmit color graphics and Private Branch Exchanges (PBX)* — a communications switchboard for both data and voice: Data is switched to the target computer while voice goes to a telephone. The capabilities of a PBX are too numerous to mention and some can handle several thousand lines, enough to provide switching for the entire Department. Communications links will be via existing local and long distance telephone services via coax cable, or light transmitting fibre cable. Links can be local, inter-city, or by satellite.

Joe Boll, director, Finance and Administration Branch (left) and Ed Millar, Finance Division, receive some practical advice on the OCRA program from instructor Chris Kincaid.

We hear much about the need to increase productivity in the federal public service, but the vast majority of AES staff across the country now works very hard and conscientiously. The only possibility to increase our productivity is to change the way we do certain things, and the new technology will help us in this. There are implications for all staff, including senior managers; the person who cannot operate a keyboard effectively will be left behind. I do not see massive layoffs in the future unless the government takes a conscious decision to reduce its range of services to the public. Rather, the future I hope to see is an AES of size much as at present, meeting increased demands from both the public and the central agencies. Our future hinges on the introduction of new technology in everything we do, not just in the office. This has been typical of our past, and I see no reason for this to change.

Jim McCulloch
Director General
Central Services Directorate

Office furniture will be completely redesigned ergonomically to accommodate the worker to the new technology, rather than letting him/her tolerate its discomforts.

Obviously the opinion of women will count heavily both in the field trials and in the future office and it is well represented on the evaluation team. But how do AES female staff feel about the project as it gets underway?

Susan Falla, former convenor of Equal Opportunities for Women (EOW) says there used to be considerable concern among AES women employees over the health and safety aspects of using VDTs, but she thinks the fear is much less prevalent now because AES has a policy to relocate women away from terminals during periods of pregnancy. Says Ms. Falla, "Women are very interested in the current changes in office automation and are taking most of the innovations in their stride. Overall, their attitude is very positive."

* Scheduled for installation at AES Downsview in September 1985 is a PBX (Bell Canada SL-1) integrated voice/data network with full self administration (i.e. under control of AAG telecommunications officer.)