REPORT ON DEVELOPMENTAL
ACTIVITY UNDERTAKEN TO
SUPPORT INTER-AGENCY
EXPLORATION OF TELIDON
IN EDUCATION

Volume II: Appendices

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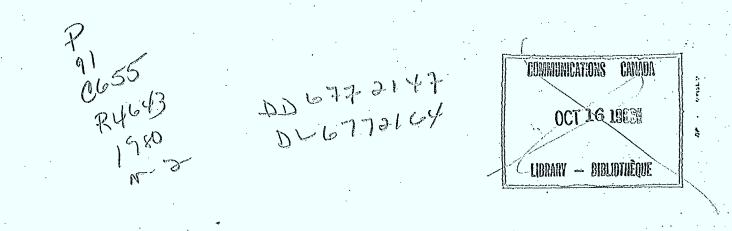
Volume 2

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TELIDON AND EDUCATION
UPDATE: February 6, 1980

1. BROADCAST TELIDON

Last summer's UPDATE forecast that the components of a teletext
system would be available in time for a BROADCAST TELIDON
field trial to begin in January. At 3:00 a.m. on January 11,
Bob Fitzgerald of the Department of Communications research
centre, aided by members of OECA's Technical Services staff,
completed the necessary installation. Telidon was on the air,
carried throughout the province on lines 15 and 16 of the vertical
blanking interval of TVOntario's television signal.

The field trial -- broadcast mode -- will begin in earnest when
more user terminals are delivered by the manufacturer. Judging
by the first public display of the new technology, at the
Society of Motion Picture and Television Engineers conference
held at the Sheraton Centre in Toronto February 1-2, vivid and
reliable reception of text and color graphics can be expected
of the system. For the first weeks of transmission, a limited
but varied magazine of fewer than 40 pages will be carried. A
system capable of transmitting several hundreds of pages per
cycle is due for delivery in March. The host computer for the
larger system, a PDP 11/34, will have storage for 5,000 pages,
from which updated content can be selected daily for insertion
in the broadcast magazine.

2. INTERACTIVE FIELD TRIAL

Meanwhile, components of the parallel INTERACTIVE TELIDON field
trial have been moving into place over the past six months, slowly,
as deliveries permit. Although fewer than 20 user terminals
have been deployed to date, the distribution is comprehensive,
reaching Ottawa, Belleville, Toronto, Acton, St. Catharines,
and Waterloo, and agencies including elementary and secondary
schools, municipal libraries, colleges and universities. If
promises of hardware delivery are borne out, by April 50 user
terminals will be deployed, each terminal capable of receiving
both broadcast and phone-linked information.

INTERACTIVE DATA BASE

At this writing, the data base is housed in a minicomputer
(STANLEY) operated by the DOC in Ottawa. The number of
pages available for retrieval from STANLEY is fairly large,
but the usefulness of the pages for educational purposes is
limited by the appropriateness of the content and the adequacy
of the indices. The project team at OECA has been concentrating
on two fronts -- devising serviceable indexing devices, and
creating a range of content that might suggest to other information
providers ways to exploit the medium. Other information
providers have begun to create data base material. Clearly,
the more there is, and the more appropriate to every level
of education, the better the various field trial participants can
assess the potential of Telidon.

3. DEVELOPMENTS ON THE TECHNOLOGY FRONT

Texcon terminals. The DOC's Communications Research Centre
has made available a computer software program that should go
some way toward alleviating the shortage of page creation terminals.
Those colleges and universities that have DEC computers should
find it relatively easy to insert the software disc, link
the machine to a Telidon user terminal, and obtain a read-back
on the television screen of what they've typed in on their
ASCII keyboard. For more information, call Dr. Bill Sawchuk at
the CRC (613, 596-9221) or Frank Gratzer at OECA (416, 484-2900).

Upgraded IPS terminal at OECA. Those information providers
who have included complex graphics such as maps in their page
sequences, and who have access to the page creation terminals
at 2180 Yonge St., Toronto, will appreciate the recent linking
of a small television camera to one of OECA's two entry terminals.
Pictures and graphics placed under the camera lens appear on the
page display screen appropriately placed as to size and
location, permitting the operator to create the required graphic
without multiple iterations of transparencies.

Recent IPS software. There has been an intermittent upgrading
of software governing the operational reach of the page creation
(IPS) terminals. The present version 1b includes distinct graphics
and text programs superior to the earlier version 1.0 (for
example, shades of gray can now be incorporated in graphics, and
text can be keyed in without stop-and-go instructions for every
line). We are told that version 2 software is not far off.

Telidon and NATAL. For some years the National Research Council
(NRC) has been working on a computer language, NATAL, for highly
interactive sequences. An interface has been written that enables
a Telidon terminal to access the NATAL information. As a
result, a user who has a keyboard attached to the user terminal
may interact with a NATAL program by supplying information to
be manipulated by the software. This is seen as a step towards

making the Telidon terminal both a sender and a receiver of information.

Satellite transmission. TVOntario in association with the Department of Communications is now testing direct broadcast satellite reception in parts of northern Ontario not otherwise able to receive television signals. It is expected that teletext decoders will be made available to several of the sites now that Telidon is on air, so that some assessment can be made of the potential of the new medium for expanding educational opportunities in remote regions.

4. INFORMATION PROVIDERS: WHAT'S COOKING

Because the purposes of the various field trial participants differ, the range of applications will differ. Without going into detail, we can say that subject matter announced thus far includes geography, reading development, science, and set theory (math) at the elementary-school level; motion geometry and drafting at the secondary level; political and historical cartooning, communications, and health information at the college level; and data base organization and graphic analysis (geography) at the university level. One library system is testing the use of the system for providing a schedule of library activities and services. The Atmospheric Environment Service is exploring the provision of updated weather map information. A school for the hearing-impaired is examining the potential of Telidon for teaching language communication. The Ontario Cycling Association is providing material. Some information providers not linked to any agency have undertaken to create content in the field of social studies.

5. INTEREST IN TELIDON AND EDUCATION

Since the installation of a demonstration user terminal at OECA headquarters last summer, a steady stream of visitors from far and wide has taken advantage of the opportunity to sample the data base materials and to observe how pages are created on the IPS terminal. The visitors' book contains over 250 signatures, representing schools, colleges, universities, libraries, private corporations, and visitors from outside Ontario. As this is written, an engineer from Japan is exploring the Telidon facilities. He is the latest in a line of visitors that includes delegations from China, Israel, France, Belgium, England, Egypt, Australia, Ireland, and Norway.

Much of the interest shown is in the technology, but there is no mistaking the widespread awareness that a system of technology is only as good as the content it delivers. We have the impression from inquiries we receive that some of the Telidon field trials developing in Canada are much in need of good educational content. These perceptions reinforce the notion that the Telidon and Education field trial, in involving educational institutions in the development and evaluation of content, will

have an impact on the further evolution of the technology.

6. COMING EVENT

Computer Culture Exposition, Harbourfront, Toronto,
May 6-16, 1980, plans to include Telidon exhibits.
Contact Richard Hill, Ontario College of Art.

Note: If field trial participants have news of forthcoming
Telidon-related events worthy of inclusion in the data base,
please contact us at (416) 484-2931.

Contact: John Syrett   (416)484-2931
          Maria Cioni   484-2931
          Janet Webb   484-2930

The Ontario Educational Communications Authority
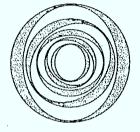2180 Yonge St. Rm. 603
Toronto M4S 2C1

World's First Trials of New Information System

Toronto, January 31, 1980

Field trials have now been launched for a new communications
system that has the potential to become a powerful educational
tool.

TVOntario, one of the world's top educational broadcasters,
and the Federal Department of Communications (DOC) have united
broadcast television with the new Canadian videotex system
called Telidon.

TVO, the broadcast service of the Ontario Educational
Communications Authority, expects that when the system is fully
operational it will be able to provide curriculum-linked
information and illustration, bibliographies, course descriptions,
and lists of support materials. The system will also be able to
supply computer-assisted learning projects, and give ready access
to news, weather, stock market reports, entertainment guides, and
referral services. All this information could be available to any
viewer via the television set.

Telidon was first developed as a two-way communications tech-
nology by the DOC. It will provide graphics and print information
on home TV screens. The system will allow viewers to retrieve
information from any number of data banks plugged into the system,
and eventually to have direct terminal-to-terminal contact with
another user. Equipped with a small electronics package and hand-
held key pad hooked to a slightly modified home color TV set, users
will be able to retrieve a potentially unlimited number of "pages".
With superior resolution capabilities and other technical
advantages, the government-developed Telidon technology is generally
considered the best in the world. TVOntario and DOC have begun
field trials on the two-way interactive mode.

At the same time, TVOntario field trials are testing a tech-
nology in which information is transmitted on a one-way, broadcast
basis. Using the normally unused portions of the broadcast signal,
TVOntario is broadcasting pages of information in a continuous
cycle, without interruption to regular broadcasting. And, unlike
two-way Telidon, this system requires no phone line or cable
connection. It is simply broadcast over the airwaves. Initially,
35 pages are available on the system.

Peter Bowers, TVOntario's general manager of operations, says that by April, DOC and TVOntario plan to have a total of 55 Telidon terminals set up in schools, colleges, universities, science museums, and private homes. These terminals would be capable of operating both in the interactive mode (two-way) and in the broadcast mode (one-way) and by then there should be 300-500 pages on the broadcast mode.

TVOntario's primary interest in Telidon, according to John Syrett, learning-systems designer and Telidon project leader at TVOntario, is to develop innovative uses in education.

Syrett envisions using Telidon to complement existing educational television activities for such things as: broadcast listings, specialized schedules organized by subject or grade level, program notes, teacher's guides, discussion questions and answers, computer-assisted learning, and captioning for the hearing-impaired or speakers of foreign languages.

Syrett said that TVOntario is exploring educational applications in both the broadcast mode and the interactive mode. TVOntario will develop some content specific to its own use as well as some sample materials for use by schools, but its objective is to encourage educational institutions to develop their own content.

From TVOntario's current Telidon master menu, which is provided to let users select the pages of information they want from the system, a user today could choose from a listing of upcoming events in Toronto called What's Happening, Recipe for Today, Today's Good Driver Question, Upcoming Books, Educational Opportunities, Health Notes, and a couple of short quizzes.

Release No. 80-28

For further information, contact: Suzanne Grew, OECA
                                 (416) 484-2782
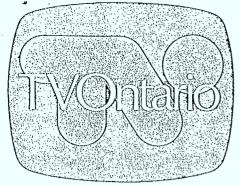
                                          or

                                 Mike Bryan,
                                 Media Relations and Public Liaison,
                                 DOC-HQ, Ottawa
                                 (613) 995-8185

July 25, 1979

THE OECA AND TELIDON

Information systems that feature long-distance linkage of the computer and the television screen are already in operation on a limited basis in some countries. In Canada, the federal Department of Communications has developed a sophisticated version of such a system, Telidon, which combines alphanumeric text with an advanced graphics capability.

OECA Participation in Telidon

During the coming year, the OECA will establish field trials to test Telidon and Education.

I.   ### Technological Testing - Field Trials

As an educational broadcaster, the OECA will use its broadcast network (TVOntario) as one important element in tests of different carriage modes of Telidon.

Broadcast Field Trials

Telidon data can be transmitted in the vertical interval of the TVO broadcast signal to a potential 85 percent of the Ontario population. In this mode, the viewer will be able to select pages of information from a file of several hundred pages reflecting a variety of information sources, such as: news flashes, weather bulletins, stock market reports, educational resources and games, and tourist information. When the viewer punches in a number on the key pad the corresponding frame will be electronically "grabbed" from the broadcast file for display on the screen.

It is anticipated that by January 1980 a host computer for the broadcast mode will be on site at the OECA, and up to 55 decoders will be deployed throughout the province for test purposes: some in private homes, others in schools, colleges, libraries, and other settings.

Interactive Field Trial

The OECA has a special interest in exploring the systems implications of broadcast Telidon, but feels that it is important not to do so in isolation from other modes of transmission.

To the greatest extent possible, the OECA will attempt to integrate the broadcast and interactive field trials in terms of joint use of facilities, interconnections between data bases, and evaluation. With these components in place, the OECA will attempt to demonstrate the complementarity of broadcast and nonbroadcast services.

In the interactive mode, a telephone link to a host computer gives access to many times the number of pages available via the broadcast link. This mode has the potential to access hundreds of thousands of pages.

Range of Services

Through broadcast or nonbroadcast ("interactive") modes of transmission, it is the OECA's intention to make provision for a wide range of services suited to a variety of user needs and capable of affording a reasonable basis for evaluation of the total operational impact of the system.

It is anticipated that in due course the range of services provided will include:

Educational

Curriculum-linked information/illustration

Programmed learning sequences

Appraisal instruments

Dissemination of project reports

Discussion questions

Updated information in specialized fields

Selected bibliography

Lists of available extramural and intramural courses

Off-hours delivery of educational materials

Calendar of conferences and other educational events

Career information

Educational games

TVOntario broadcast schedule

Background program information

Home viewer questions

Lists of support materials

Videotape catalogue listings (sample)

General

News headlines and abstracts

Updated information in specialized fields

Weather and environmental information, regional and other

Travel information

Market reports

Consumer information

Agricultural resource listings

Career/job information

Sports reports

Daily recipe/nutrition

Restaurants

New books

Referral services

Entertainment

Subtitling on test basis

Humor

How-to's (games, others)

II. Development of Educational Applications

The OECA will undertake to develop and demonstrate Telidon and Education in cooperation with other educational institutions. This venture consists of the following elements:

A. Formation of Educational Consortia

The OECA will work with other educational institutions for the development of educational applications. The Telidon field trial resources will be available for the creation, distribution, reception, and evaluation of these applications. Generally speaking, we look to conventional institutions for the creation and provision of computer-assisted learning (CAL) sequences since they have been active in this area for some time. Preliminary studies would indicate that computer-managed learning is also a concept that could be realized with the aid of Telidon technology. This concept differs from CAL in that the technology is employed by the teacher to assist students to assess their current mastery of units of curriculum.

B.   Inclusion of Other Information Providers

In order to offer a wide range of interesting and useful information to Telidon users, the OECA will attempt to develop a broadly based pool of Telidon information providers, and to determine the most suitable mode of delivery for various types of information.

Thus, the OECA hopes to accommodate a number of general information providers in the broadcast trials, with coverage including news, weather, sports, stock markets, consumer information, editorial opinion, etc. In reference to general information sources, it is apparent from experience in the U.K. that provision of "real data" has particular value in an educational setting.

C.   Educational Applications

1.   As a complement to existing television activities, for example, schedules, program notes, subtitles, etc. Telidon can be used to provide instantaneous feedback to schools during or after educational telecasts.

2.   As a replacement or alternative to conventional print activities, with the opportunity to explore the efficiency of electronic publication of specialized material via Telidon, where conventional print economics would not justify it.

3.   As a 24-hour information search and retrieval capability, releasing the learner from the restrictions of schedules.

4.   As a means of disseminating existing data bases such as Access-Index, Utlas, ERIC, Onteris, etc.

5.   In computer-assisted learning including games, quizzes, computer-managed learning.

6.   In interactive dialogues between students and teachers.

D.   Evaluation

In a year in which content and technology are in an initial test phase, it is deemed inadvisable to make a clear-cut separation between the evaluation of the educational/ informational service provided and the operational effectiveness of the delivery system. Users will be asked to respond to questionnaires prepared under the direction of research/evaluation personnel available to the project team.

The questionnaires can be processed by mail, telephone, the Telidon system itself, or with the aid of the OECA's recently developed "program analyzer" technology. The response of users will be sought in reference to:

- Human factors
- Waiting times, especially in the broadcast mode
- Educational effectiveness
- Relevance of information content
- Organization of content
- Suitability of various modes
- Interrelationship of broadcast and nonbroadcast service
- Technological efficacy
- Frequency of system failure
- Integration with existing institutional systems
- Integration with home environment systems
- Efficiency of electronic publications
- Sociological impact
- Preferred cost structure (decoder; per-unit service)
- Special uses, as for the hearing-impaired

E. Future Educational Applications to be Developed

   1. Tele-software

      The OECA is anxious to exploit the capacity of Telidon to deliver programmed learning sequences via broadcast and interactive Telidon. The demonstrated ability to deposit software by down-line loading of user-terminal memory is seen as a means to accomplish this end in a logistically effective manner.

   2. Telidon with Audio

      The OECA feels that Telidon is potentially a powerful learning medium in its own right. The addition of an audio channel would be extremely useful for educational purposes, and the OECA would like to test such audio-graphic learning packages.

   3. Time-coded Pages

      Delivery of specific information to specific users by use of time-coded pages is seen as an important capability of Telidon, given the provision of software appropriate to broadcast transmission. Synchronization of scheduled television programming and matching Telidon-based messages is dependent upon the realization of this capability.

A special case is captioning. The OECA is interested
in cooperating with the Department of Communications
and other agencies in the development and test
application of this capability.

F. Future Educational Applications to be Refined

1. Captioning

Telidon offers the ability to distribute more than one
set of captions simultaneously in order to accommodate
different levels of comprehension of the hearing-impaired,
or different languages appropriate to the needs of several
linguistic groups. If exploratory activities give
indications of short-range practicability and can
identify resources and information providers, the OECA
hopes to run limited tests of Telidon-based captioning.

2. Graphics Capability

The OECA is confident that the refined graphics
capability offered by Telidon can expand communication
and comprehension beyond the limitations of alphanumeric
codes. It anticipates educational applications in
such fields as sign and symbol recognition; illustrations
in mathematics, science, and technical subjects;
comparative charts in economics, demographics, and
statistics; maps and profiles in geography and
geology; cartoons in social studies and basic
literacy; and others.

For further information contact: Maria L. Cioni,
Telidon Liaison
Room 603
2180 Yonge St.
Toronto, Ontario
(416) 484-2930

TELIDON AND EDUCATION
UPDATE: July 25, 1979

PROJECTED EVOLUTION OF TELIDON FIELD TRIAL

In response to a request for an outline of what Telidon facilities will be
available, and when, over the next 6 months, the following is provided.
It should be noted that this is a projection, not a commitment; the OECA
is not the original supplier of the hardware or the computer software.
We are given to understand however, that the components of a teletext
system will be available in time for a broadcast field trial to commence
in January. The elements of a small-scale interactive system are expected
to be in place well before that, in the early Fall.

The items listed below are presented in approximate order of their expected
availability. Comments are offered on what courseware development or
page creation opportunities are made possible by the technology described.

July 1/79: RGP 500 entry terminal available at Room 603, 2180 Yonge St., Toronto

This unit permits the creation of graphics and text in colour for deposit
on floppy disks. Until the remote-entry software now under development is
delivered (v. below), this means that page sequences will be sent on floppy
disk to the DOC's PDP 11/60 for load in Ottawa. It then becomes retrievable
to any user terminal via phone link (modem required).

Our first experience with the RGP 500 indicated slow key-board entry and
inadequate manipulation of text. As of July 31, it is expected that much
better software will be available in this connection.

The significance of this entry terminal for Information Providers able to
work directly with the terminal at 2180 Yonge St. is that experimentation
on the creation of graphics and text can begin by booking time on the machine
(Janet Webb, 484-2930). Our small staff (Janet, Joy Wilson) may be able to
assist, in selected cases, in keying in textual material provided in hard-
copy form (We have Datacom machines). We will also assist in providing
workshop sessions required to master the operation of the RGP 500.

Other RGP 500s exist, but at this writing, their general availability is
unknown. A second machine is in the hands of Cableshare until they complete
work on the remote-entry software, when it reverts to the OECA.

July 13/79: <u>Telidon user terminal installed at Room 603, 2180 Yonge St.</u>

Linked by phone to the PDP 11/60 in Ottawa, this item makes possible the assessment of courseware and other page sequences that have been deposited in the host computer. The possibilities for colour-graphics animation are impressively illustrated by sequences already "on deposit".

Aug 1/79: <u>Branch of a tree structure assigned</u>

For the time being, a PDP 11/34 in Ottawa is the available host, and the DOC will assign a branch of the numbered tree structure to the OECA. Presumably Information Providers working with the OECA will need to have sub-sets of the branch assigned, in order to obviate any possibility of override. We are presently looking at the possibility of working within a generally-agreed-upon taxonomy.

Aug 31/79: <u>Remote-entry software available for the RGP 500</u>

We have found in another context that the shipping of floppy disks to distant host computers is both slow and risky. The remote-entry software under development by Cableshare is presumed to be specific to the RGP 500, and will make remote entry possible from any site where one of these machines has been deployed. Not many RGP 500s exist yet, but a substantial number are on order by the DOC; Fall delivery anticipated.

Sept 30/79: <u>From 10-20 user terminals available</u>

The objective described in the OECA proposal to DOC was to have 55 user terminals available by December, each capable of receiving both off-air and off-the-phone signals. Latest information is that the number of double-function terminals available for late December will be 30. Prior to that, it is expected that a number of phone-linked-only terminals will be made available. Because Information Providers will need to be able to assess and modify the content they design, it is reasoned that most of these will be deployed among the I.P. group, and that during the Fall the I.P. group will do what can be done to gather users' responses on site (as an evaluative adjunct to page creation).

Oct 1/79: <u>Approx. date of delivery of a PDP 11/34 to Cableshare</u>

The significance of this is that the software/hardware package needed to disseminate content pages by broadcast must be developed in a test situation involving the intended broadcast-host computer. The package is due by December, which means that the PDP 11/34 will not be operational at the TVO site until that date.

Because much of the content of the broadcast Telidon service will be time-sensitive, the question naturally arises whether Information Providers can test the operational requirements for a daily or weekly flow of up-date information (news, bulletins, whatever) prior to December. The thought here is that this should be possible during the Fall, using the phone-linked system. One spin-off of that capability could be a "closed-circuit" electronic "newsletter" maintained by the I.P. group itself, reporting on what activities the various members are proceeding with.

The facility with which this up-dating function can be accomplished appears to us to be associated with the availability of various software interfaces that permit information in existing data bases to enter Telidon data bases. We are led to believe that some of these are relatively simple of achievement, but the personnel and funds required for their realization have yet to be identified. The project, the system, and Canadian interests generally, would we think be advantaged by ideas and activities along this front. We welcome communication on this matter.

Dec 1/79: Approx. date of availability of essential system components
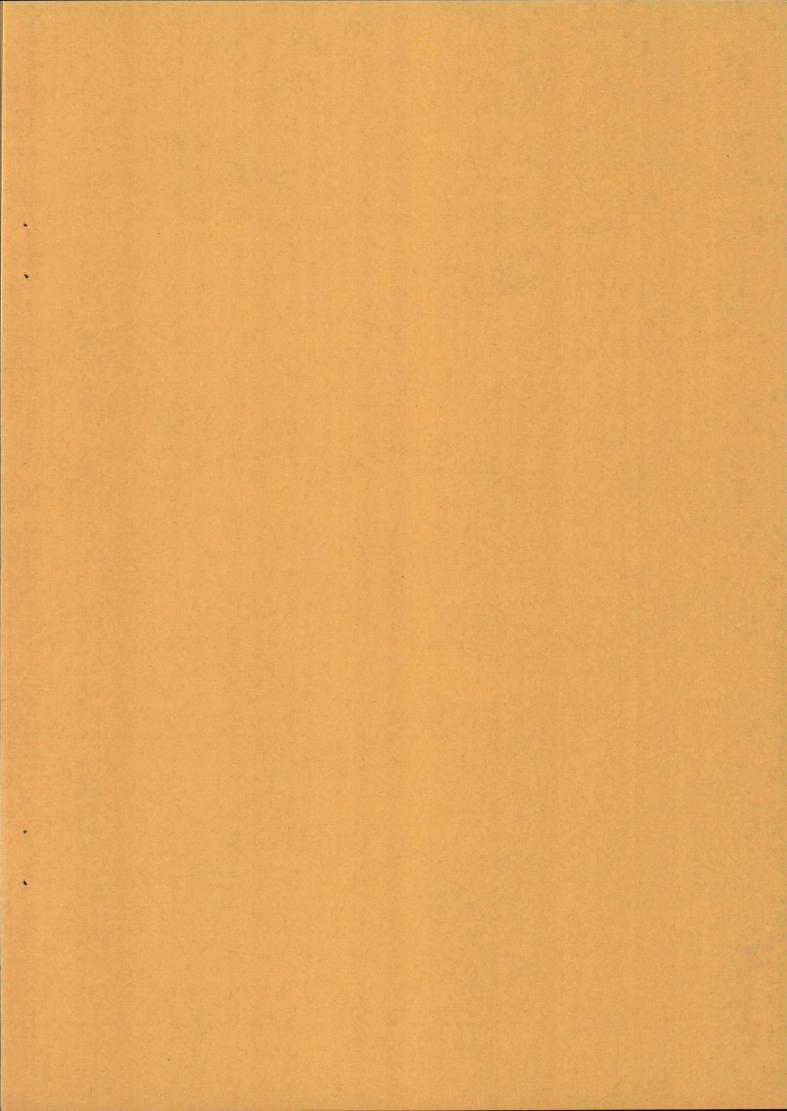
The system components thought essential to an operational test (broadcast/ non-broadcast) are:
- RGP 500s capable of remote entry
- PDP 11/34 (broadcast host) at TVO
- software/hardware package for broadcast page processing
- Interactive host
- 30/55 user terminals (broadcast/interactive)
- a variety of page sequences that will enable the I.P. group to assess the applicability of the system to various needs and presentation modes

Contact: John Syrett, 484-2930
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          The Ontario Educational Communications Authority
          P.O. Box 200, Station Q, Toronto, Ontario. M4T 2T1.

The Ninth Annual Urban Studies Symposium

York University

TELIDON, A NEW MEDIUM?

John H. Syrett
Project Manager
Telidon and Education Project

26 February 1980

Telidon, a new medium?

Recently, a panel of educators from a county board of education in Ontario summed up their first impressions of Telidon. They described it as a "computer-assisted information" system rather than a "computer-assisted instruction" system.

That observation can serve as a point of departure for an exploratory examination of possible perceptions of Telidon as a distinctive medium. The perception that these educators expressed doubtless found its source in several factors. I assume that one of these factors was the mind-set of teachers much concerned with courses of study, with instructional technique, and with the potential of home computers as instruments of instructional technique. I assume that another factor was the configuration of Telidon technology at the time they observed it, limited as it was to key-pad responses and therefore appearing less capable of textual dialogue between the user and the computer than home computers fitted with keyboards. In the context, it was logical to perceive Telidon as primarily an information retrieval system.

But is it? With the addition of a keyboard to a user terminal, and with appropriate software in the computer, does Telidon not comprehend both computer-assisted instruction and information retrieval? With the upgrading of a user terminal to a transceiver capable of communicating with other transceivers without the intervention of a central computer, does not Telidon suddenly move to yet another plane of activity, one freed from the confinements of mobilized, programmed, and stored intellectual responses?

What existing medium is Telidon most like? In the transceiver mode, is it perhaps a visual telephone? In its linkage to central data bases, is it perhaps a visually augmented networking device? In its ability to transmit complex graphics, is it perhaps silent television? Is it all of these or none?

I am, at this writing, inclined to respond to that question, "It is all of these and none." None, in the sense that it is distinctive. It cannot be dismissed as "nothing but" this or "nothing but" that.

How, then, is Telidon distinctive?

While it is too early in the evolution of the technology to attempt a definitive answer, we may be helped by studying the attributes of other well-known media. By comparison and contrast, the attributes of Telidon may emerge.

Let's begin with television. There are those who would define television as film-at-a-distance. The casual observer of the television scene, noting the extent to which latter-day TV is a carrier of third-run, not to mention thirty-third-run, movies, might well see the merit in that definition. The student of film, moreover, could seize upon the parade of facsimiles, the flow of images to the eye and to the ear presented by both media, to argue that film and television are alike in their ability to convey experiences.

The parallels break down, of course. Film - large screen and stereophonic sound in a theatre setting - is more of a substitute experience. Television - small screen in a home setting - could be called an additional experience. Besides, television is more topical, more involved with events and eventfulness.

The so-called immediacy of television, however, is not apt to change the fundamentally passive attitude of the viewer in relation to the screen, a characteristic of both film and television. By contrast, Telidon is dependent upon a response from the user. Indeed, there will be no "experience" unless it is initiated by the user.

The nature of the Telidon experience called up by the user is apt to be more textual, perhaps more left-brain-centred, than what film and television convey. On the other hand, it need not be lacking in right-brain appeal. Color graphics and, in future, color photographs, can convey primitive impressions, as contrasted with logical connections.

Telidon, like some of the more advanced home computers, promises a distinctive blend of logic and illogic, codes and configurations, all served up, increment by increment, under the control of the user. The possibilities for building surprise and humor into the juxtaposition of Telidon pages are worth thinking about.

If it is not like television, is Telidon perhaps like existing information retrieval networks: Infomart, Infoglobe, and the New York Times Information Service, for example? While I have not worked extensively with any of these services, I have been impressed with what I've seen, especially by their ability to deliver an extraordinary range of textual information in response to key-word searches. The cost is not negligible, but for the skilled researcher the results can be expeditious and rewarding.

From time to time, we hear about the production of software interfaces that will give the Telidon user access to these information services. The point would appear to be to make such services available to people in their own homes. It's a worthy idea, and with the addition of keyboards to Telidon terminals, may yet prove feasible. But where, in this concept, does the ability of Telidon to communicate in graphic terms figure?

At present, Telidon is designed to present not much more than 80 words on the screen. In the context of reading the television screen from your living-room chair or sofa, Telidon is not a book or a newspaper. It conveys information, certainly; it communicates; but in Telidon language.

What "Telidon language" is will emerge as creative "designers" explore applications of the medium. From what I have been able to observe thus far, Telidon language will comprehend more than text and tables, and even these will be presented in relatively small increments, conveying meaning in economical terms, perhaps distinguishing discrete thoughts through changes in color. Not only will the language tend to graphic expression and illustration, but there will be a degree of animation. Visual transitions, visual sequencing (over time) will underline the difference between this form of communication and the more static presentation characteristic of books, magazines, and newspapers. While the latter present language spatially, Telidon presents it in both space and time.

In such a form of presentation, something is lost, but something is gained. Detail may be lost, but comprehensive access gained. One kind of continuity may be lost, but another kind of continuity gained. Among the gains we must surely count a responsiveness of the medium to the inquiries initiated by the user. That characteristic finds expression in, among other things, forms of dialogue having a gamelike or playful quality to them.

It will be pointed out that much of what has been described in the last two paragraphs could as reasonably be applied to the latest generation of home computers. That is true. What distinguishes Telidon from these is the PDI -- Picture Description Instruction -- or rather the principle underlying it. That principle, as I understand it, is the employment of small signals to produce complex effects. The way in which this is done, to oversimplify somewhat, is to concentrate considerable "intelligence" in the user terminal's decoder, so that a small amount of data transmitted from a central processing unit will trip a complex response. It has been contended that the principle can in due course be extended to permit not only manipulation of visual elements on the screen, but also transformation of such elements, to produce effects comparable with those achieved with computer-controlled video.

In short, narrow-band means of signal transmission -- voice-grade telephone lines, or several lines in the vertical blanking interval of a television set -- can be used to display complex effects at remote locations. In the case of broadcast, this means that instead of requiring another wide-band channel like the one needed for television transmission, Telidon messages can ride along with an existing television signal. One TV screen can therefore be used to display a television image, or a Telidon image, or, in the so-called transparent mode, both together! That makes possible, among other things, closed captioning for the hearing-impaired, subtitling in a second language, intermittent news bulletins or weather map reports, follow-up information related to the television program you're watching, and other services.

The principle underlying Telidon also makes terminal-to-terminal dialogue possible. Someone at the office can send to someone at home a textual or graphic message, which can be immediately edited by the recipient and conveyed in the altered form back to the originator. Remote chess, anyone?

To recapitulate, what we have in Telidon is an efficient means of textual-graphic communication over distance. Tied in to microcomputing capability at the terminal, Telidon presumably moves closer to textual communication of a sort characteristic of the present generation of home computers, but its inherent character, in whatever hardware it finds expression, favors a special kind of language. That language, in turn, favors a "popular" curriculum, carried on Everyman's network.

It may be of interest to hypothesize what this means, in everyday terms. Is Telidon a sort of blackboard? Yes, but a better one. Is it a kind of slide presentation? Yes, but a more commodious, far-reaching, and responsive one. Is it a tabloid? Yes, in a way, but with newer news and older information. Is it a kind of letter? Perhaps more like a lot of postcards. Is it a conversation? Yes, but less time-sensitive, more sporadic, more deliberate. Is it a library? More like a portable encyclopedia. Is it a telephone? To the hearing-impaired, the best one. Is it a personal service? More of a coping device. Is it an entertainment? A source of intellectual play. All these attributes will go into the mix that will make person-to-person exchanges possible on a grand scale, encompassing everything from barter - including learning exchange - to electronic tutorials at a distance.

A popular and functional medium, then. And like all media, it needs the artist, and the artist's materials. At this writing, the materials are centred on an entry terminal that in its very nature obstinately declines to relegate itself to mere processing of designs laid out on paper. Even when text, rather than graphics, is the visual content to be applied, a layout in color on a paper grid often fails to translate to the screen without further design judgments and alterations. Graphics require more such judgments.

One obvious consequence of the entry terminal's being both a design instrument and a production instrument is that the rate of page creation is affected. Aesthetically appealing pages will not emerge automatically upon the screen. Time is needed. And time is money. It is also employment. The question of design time therefore leads straight to the question: who is the ideal type of person needed for page creation?

My intuition is that a certain kind of writer is about to emerge upon the communications scene. A wordsmith alone will not do. A graphic artist alone will not do. The new breed of writer will have a sense of color composition and spatial layout, a knack of using few words to maximum effect, and an imaginative grasp of how the juxtaposition of pages will have impact on the sensitivities of the Telidon user.

The Ninth Annual Urban Studies Symposium

York University

TELIDON: AN EDUCATED GUESS

Dr. Maria L. Cioni
Manager, Telidon Liaison
Telidon and Education Project

26 February 1980

Telidon: An Educated Guess

It is most difficult to write a paper on the OECA Telidon field
trial when it has yet to begin officially. On the other hand, the
realization that it will be the first field trial in Canada
encourages even the timid to forge ahead. To outline for the
conference the problems of establishing a field trial of Telidon
would only describe the frustration of working with a new and
advanced technology. It is far more rewarding to grapple with
the Telidon challenge, its potential, and how the potential can
be met. This paper will discuss the challenge involved in the
OECA Telidon and Education field trial.

PART I:

The OECA field trial is a composite experiment consisting of

       1. A broadcast Telidon trial
       2. An interactive Telidon trial
       3. Participation in the Bell VISTA trial
       4. Participation in cable Telidon trials

A total of 55 Telidon terminals, operating in both the interactive
and broadcast modes, will be deployed in schools, colleges,
universities, libraries, science museums, and individual homes. The
initial aim will be to expose educational information providers to
the system and encourage them to create educational content. Some
public exposure will be obtained through libraries, museums, and
home use.

The broadcast trial started on January 11, 1980, and is operating
during network hours, that is,16 hours per day, 7 days per week.
The TVOntario educational network broadcasts reach 85 percent of
Ontario's 8.3 million people, utilizing nine television transmitters.

By April, we anticipate a nominal page capacity on the broadcast
Telidon service of 300 to 500 pages with about 20 percent devoted to
OECA purposes. The remaining pages will be used by other educational
institutions and information providers for a generalized service.

For example, a broadcast cycle could include news, weather, financial markets, sports, etc. We don't intend to carry information of a noneducational nature, once other broadcasters start offering general teletext services. In terms of information related to OECA's activities, we would carry program listings, organized by time but also by subject area, program notes and teachers' guides, program prospectuses and so forth. News concerning education, such as school bus status, school administration, and educational job opportunities, would be carried. Other educational institutions will provide pages concerning their course offerings, course registrations, correspondence courses, and other distance education.

In addition, we intend to offer Telidon materials directly related to the television program. Captioning for the hearing-impaired, and multilingual subtitles are simple examples. However, we believe that methods will be found in which each medium reinforces the other in conveying learning experiences.

In addition to integrating Telidon and television, we intend to interrelate the broadcast and interactive modes of Telidon.

The 55 terminals noted above will be able to access a 10,000-page computer facility in Toronto via telephone circuits. This arrangement will enable us to explore the advantages of the interactive mode and to examine the interrelation between it and the teletext mode.

The information content of these interactive trials will tend to be all educational, since users will, we hope, have access to other data bases with generalized information. Later on we will describe some of the interactive applications we foresee. We believe they will tend towards information retrieval, computer-assisted instruction, computer-managed learning, heavier use of graphics and symbols, and the involvement of educational institutions in the mediation of learning materials.

We are slated to participate as an information provider in the Bell VISTA/Telidon trial. Bell will be utilizing 1,000 interactive terminals and a 100,000-page computer to be located in Toronto. In addition to creating content for the VISTA data base, we anticipate acting as an umbrella Information Provider (IP) for smaller educational institutions in the VISTA trial. We hope that our 55 terminals will also be able to access the VISTA data base, but some doubt exists at present.

We have reached agreement in principle to participate in the Canadian Cablesystems Telidon trial. Cable television systems in Canada, with penetrations of about 67 percent of urban populations, represent an interesting alternative for the distribution of interactive and broadcast Telidon. By utilizing the vertical interval on one of their cable channels, they can duplicate a broadcast Telidon system. By using a full television channel, they can step up the transmission rate by a factor of 250 over teletext, assuming they have the computer capacity. With the advent of two-way cable, they can offer interactive services.

Objectives of the OECA Field Trials

With such a brand-new technology and with very little experience of applications of public information dissemination systems to draw from, our field trial objectives are diverse and wide-ranging. We hope to find out a lot of things, in terms of the technology, the management of information, the development of educational applications, and the evaluation of user response.

In the technical area, we are using the TVOntario broadcast network to transmit Telidon in the teletext mode. We are working with DOC to determine the highest data transmission rate under North American television system propagation conditions. TVOntario transmitters operate at UHF and VHF frequencies in urban and rural areas, and on mountainous and flat terrain. A variety of distribution systems are used, including microwave, off-air repeaters, direct broadcast satellite, and cable television.

OECA is currently conducting with DOC one of the world's first operational trials of a direct-broadcast satellite. We are feeding 87 hours per week of TVOntario programming to 46 receivers in remote northern Ontario, located at individual homes, institutions, cable television headends, and a low-power repeater. So we're using two new technologies, direct-broadcast satellites and Telidon, to deliver educational materials to remote locations.

We are initially trying three different data transmission rates: 3.95, 4.57, and 5.19 megabits per second. The final choice of a data transmission rate will of course affect the number of pages that can be transmitted, and the waiting times for those pages. The rate will depend on acceptable service areas and levels of error detection and correction.

We are also going to investigate the use of various lines in the vertical interval to transmit Telidon and other signals such as test signals (VITS), source identification signals (SID), and PBS captioning signals (Line 21) on an integrated or time-shared basis. The objective is to make greatest use of the available vertical interval.

We are concerned about several aspects of information management, in particular: creation of pages and sequences, organization of data bases, dissemination of materials, and presentational considerations. Information management appears to be the most labor-intensive and costly aspect of any videotex service.

Under page creation, we want to look at input terminals, the provision of text-editing techniques, the possibility of automatic data entry from other data bases such as news, weather, commodities, etc.

Under organization of data, consideration will be given to various indexing schemes, tree structures, broadcast cycles, accessing techniques, and relative versus absolute referencing.

Under dissemination of data, we are concerned about the logistics of the broadcast cycle, but also the interrelationships between interactive and teletext data, and the movement of data between various videotex data bases. Our intention is to use each mode of delivery to its advantage, and to capitalize on the interrelationships.

Finally, under presentational aspects, we will be examining the use of colors, formats, designs, waiting times, graphics, grammar, legibility, standard headers, and identification.

In program content, OECA is developing some materials specific to its own requirements, particularly in educational broadcasting and noninstitutional education. In addition, we are developing sample materials for use by conventional educational institutions.

We will explore the role of the educational institution as an information provider both within the community and the institution itself. We are examining the role of the public library in providing public access to Telidon, at least initially.

Educational information providers have been encouraged to regard Telidon as a medium in itself and to consider the design of program material accordingly. As a result, for example, less text and more graphics and animation are being used to convey complicated mathematical relationships.

Our evaluation objective will be to get user responses before we work on the technology, the software, and the applications. These field trials are not market tests, but will enable us to lay foundations for in-depth testing in future years. With a total of 55 terminals being moved through a variety of settings (homes, schools, colleges, universities, libraries, and museums) we hope to get information on an extremely broad cross-section. However, this will be only a preliminary response to Telidon in education.

PART II: The Potential of Telidon:

The "information society" has been a buzzword for some time. Transborder flow of data was recognized by the Organization for Economic Cooperation and Development (OECD) some years ago as a major issue and one that required immediate investigation (with as yet no results). Videotex and teletext might be considered the harbingers of this revolution, but Telidon, with its ability to display intricate graphics besides text, and potential for terminal-to-terminal contact (a common visual space), puts us on the precipice of the information transition.

Whether or not Telidon itself evolves as the tool of the informed society is not an issue. What is important is that it has a potential to lead to an ever more sophisticated type of home communications centre. It may be the catalyst needed to assure that an altered lifestyle due to fuel shortage and the subsequent high cost of transportation is made acceptable. It may well provide the electronic highway to bring and send information and computer software programs to and from homes and businesses. If the coding of graphics and text evolves to render the Telidon network an economical, quick, and spectrum-saving means of communication, then the information society may become a reality.

Cost to the user of a Telidon service is an important unknown that affects the technology future. The British experience has shown the costliness of using telephone lines for transmission. The situation in Britain is unique, however, and we must take into account such circumstances as the British Post Office's monopolistic character, the way in which videotex and teletext developed quite separately because of institutional politics, and the simple fact of Britain's being the first to develop teletext and videotex. It would seem advantageous for Telidon not to follow the same developmental path as Prestel.

The cost of getting and sending information may be the stumbling block for Telidon; on the other hand, the necessity of making the cost affordable may be incentive for innovation. Our early experience with setting up the field trial makes us quiver when long-distance charges are a consideration. Granted, there are foreseeable remedies to the long-distance cost problem: data line sharing and routing, fibre optics, and down-line loading of information and software into the memory of the local decoder. These solutions may never reach fruition simply because during the field trial period the cost to the user (whether absorbed or not) is judged to be too high. Certainly, a field trial in one location with the host computer in the local call area is the ideal, but when the user has to pay long-distance charges, what then? If Telidon is used primarily to transmit games and quizzes, will the user be willing to pay for this type of content?

One way to tackle the problem of cost is to concentrate on the broadcast mode of delivery and to consider ways in which the shortcomings of that form of delivery may be negated. By using more lines than one or two in the vertical blanking interval, the capacity for carrying data may be significantly increased. Also, faster rates of data transmission and more sophisticated computers and software and higher memory capability in the decoder will augment the number of pages to which a user may have access and decrease the waiting time for information delivery. A hybrid mode of delivery, e.g., broadcast of a set of pages one way, and touch-tone telephone request of additional pages the other way, may reduce costs while permitting the user to exercise choice from a large data bank (either teletext or videotex).

Cost and content are intimately related. It is assumed that businesses would pay a premium price for the latest information pertinent to their operations. In France, the state-owned telephone authority will replace telephone books with small viewing screens (CRT) so that citizens will be forced to use the system. This certainly should encourage the use of videotex!

For ourselves, the focus on a particular application, the educational use
of Telidon, gives our field trial a certain cohesiveness. The delivery
of university correspondence courses, terminal-to-terminal tutorials,
schools in different parts of the province interacting and exchanging
information with each other, all sorts of information available to
students when and wherever they want: facts such as these would make
Telidon a valuable educational tool. Would people pay for such
information? Should people pay for such information? Do people have
a right to information or is it a private, salable commodity? This is
a question that will often be debated in the next few years. For some
information, legal, medical or business, there is a fairly clear-cut
understanding that a user would be willing to pay the going rate. Is
educational material in the same category? Here, the debate would be
on fertile ground. What is educational information? If it tells us
how to apply for social insurance, it may be classified as public
information; but if it is a highly developed pedagogical sequence,
it may not be public information nor would it be free. As we would
pay for a textbook to obtain specific information, so we may be paying
either directly or indirectly for specialized material.

Who is going to decide what material is offered on Telidon? The field
trial initially affords a shelter from this question. One solution
would be to say that the market decides on what it wants. To some
extent this is the principle behind private television programming.
If the people are willing to pay for something, give it to them. On
the other hand, what about information that is not popular in either
the entertainment or business sense? For educational material, for
example, should there be an editorial board such as publishers have,
should the ministry monopolize formal programming, or should the
marketplace decide here too? It may be argued that with this particular
sort of medium poorly devised educational material may prove more
harmful than good. If this is so, will there be a change in the
ministry and various higher educational institutions to "publish"
electronically or to revise their correspondence areas? Perhaps some
teachers' prime concern will be to devise course material for this
medium on a sound pedagogical basis.

Content and applications of the content will either give the impetus
to the acceptance of Telidon or signal its demise. The challenge,
without doubt, lies in the building of the data banks, but ironically,
the content is so largely dependent upon the technology that unless the
technology can meet the demands of the users the "information society"
will not exist. We have come full circle. The technology itself, if
it cannot be adapted quickly to the perceived uses, will not precipitate
the information society, but disillusion its advocates and confirm the
the fears of its opponents.

What are some of the ways that Telidon must evolve, and evolve rapidly,
from its current state? The following list should be considered as
soon as possible:

- The option of the full keyboard on the user terminal to
  make a transceiver, i.e., random word accessing of information

- More sophisticated production means to build up the data bank:
  - drawing tablet
  - imprinting a video picture into the computer memory
  - picture manipulation (scaling, rotation)

- Incorporation of sound

- The placing of hardware production in the hands of a competent manufacturer after the research and development work is done

In sum, Telidon is extremely versatile, since as a protocol it is independent of the terminal. In principle, a user could select from a wide range of Telidon terminals, from a simple text-only type to an alpha-geometric one with varying levels of graphic resolution, to the sophisticated alpha-photographic terminal. Several components would be manufactured, and the users would choose terminals for their level of sophistication. Ideally, upgrading of the terminal would be relatively simple, perhaps like buying stereo components now. This scenario is at least five years in the future. To an uncomfortable degree, the manner in which the field trials are conducted now will greatly influence the continued existence of Telidon. The next five years may be an eternity for Telidon.

List of Questions

1. Should there be a government regulatory framework for computer data in general and transborder data flow in particular?

2. At what point should government research and development work be turned over to the private sector?

3. In the initial developmental stages of a technology, how important is it that a firm control of the technological standard be enforced, to assure the evolution of the system to the foreign-competitive or marketing stage?

4. Should the government or any organization have the right to force the acceptance of a new technology on individuals? For example, the introduction of CRTs and Antiope in France as a replacement for the telephone book.

5. Does the individual have a right to information, or is it a private commodity? Is there a dividing line?

6. Should the broadcast mode and interactive modes of Telidon develop in a complementary way, or should they be quite separate as in Britain? Which form of development would be most advantageous to the user?

7. Should a common carrier provide the content itself or simply the means of carriage? Who has editorial control?

8. On what basis should an advanced technology be evaluated? On need? On application, or service? On profit?

TELIDON AND EDUCATION IN CANADA

Peter G. Bowers
General Manager, Operations

Maria Cioni
Telidon Project

Ontario Educational Communications Authority (OECA)

Canada

As an educational broadcaster, the OECA is using its broadcast network (TVOntario) to test different carriage modes of Telidon. OECA is the only agency attempting to develop both interactive and broadcast modes in an integrated way. Participation in a variety of field trials is discussed and objectives described.

Through broadcast or interactive modes of transmission, it is the OECA's intention to make provision for a wide range of educational and general services. The potential of Telidon for educational uses is explored and examples of possible services discussed.

PETER G. BOWERS

Peter Bowers joined the TVOntario organization at the end of 1967, when it was still in its formative stages. Initially as Chief Engineer and latterly as General Manager of Operations, he participated in the development of the organization to its present state, where it broadcasts educational programs 5500 hours per year on a 9-station television network in Ontario. Most recently TVOntario has launched two significant field trials, Direct Broadcast Satellites, and Telidon, in both interactive and broadcast modes, under his direction.

Bowers graduated from the University of Toronto in 1956 in Engineering Physics and in 1972 acquired an MBA from York University.

MARIA CIONI

Maria Cioni received an honours degree and a master's degree in history from the University of Calgary, Alberta, in 1969 and 1970 respectively. She was awarded a Canada Council Fellowship to study 16th century British history at Girton College, Cambridge where she earned her doctorate in 1974.

As Policy Advisor to the Executive Director of the Canadian Radio Television-Telecommunications Commission from 1975-1978, she conducted studies into such matters as Federal/Provincial responsibilities under the Broadcast Act, advocacy advertising, advertising aimed at children and the impact of cable and satellite transmission on Canadian broadcasting. In addition, in 1978 she authored a study on the history of multi-lingual broadcasting in Canada. She joined the Department of Communications, International Branch in 1978 where she acted as advisor on Canada's position in international satellite organizations. Currently, she is Manager of Liaison for the Telidon Project at the Ontario Educational Communications Authority and is special advisor on satellites.

1. INTRODUCTION

It is a pleasure to be at the Viewdata conference to share with you
the work that is being done by the Ontario Educational Communications
Authority (OECA) with Telidon and education. The work we have
embarked on is unique, for OECA is one of the very few agencies
who are undertaking to develop educational applications for a videotex
system in any major way.

By way of introduction: The Ontario Educational Communications
Authority is a crown corporation in the province of Ontario whose
policies and directions are determined by a 13-member Board of Directors
appointed by the Lieutenant-Governor-in-Council.

It is our legislated responsibility to produce and distribute programs
and materials in the educational broadcasting and communications
fields, and to engage in research in these fields. OECA's mandate
is to provide educational opportunities to all residents of Ontario,
regardless of age, level of education attainment or location within
or outside conventional educational institutions.

We work in cooperation with schools to produce materials that are
in accord with their curriculum and supportive of their teaching programs.
We also work directly with people at home who are not part of any
formal educational process.

With our mandate for educational communications, we naturally took
an interest in the potential applications of videotex for education.
With our distribution system in place, which consists of nine broadcast
transmitters; with a production capacity in operation including producers,
educators, writers, and researchers; and with a network of contacts
with educational institutions, we are well positioned to undertake
this investigation.

Our initial exposure was to the British teletext system. About four
years ago, we looked upon teletext as a useful adjunct to our educational
television activities. We were stymied, however, by the lack of available
525 line NTSC technology and the lack of interest amongst other
North American broadcasters.

We were heartened by the announcement of ANTIOPE which seemed
at the time to be more readily adaptable to NTSC. We were just
on the verge of starting a field trial when in August 1978, the Department
of Communications (DOC) unveiled Telidon, Canada's sophisticated
Videotex system.

Telidon forced us to reappraise our expectations for teletext applications.
With high resolution graphics available we now looked on Telidon
as an educational medium in its own right. It also made us decide
to look at all modes of delivery: telephone, cable television, broadcast,
and even physical delivery.

The work we have embarked on since then is unique in a number of respects. OECA is one of a very few agencies undertaking to develop educational applications for Videotex in a major way. Also we are the only agency to our knowledge that is attempting to develop both interactive and broadcast modes in an integrated way. Our broadcast field trial is underway right now.

2.   FIELD TRIALS

The OECA field trial is a composite experiment consisting of:

-    a broadcast Telidon trial
-    an interactive Telidon trial
-    participation in the Bell Vista trial
-    participation in cable Telidon trials.

A total of 55 Telidon terminals, operating in both the interactive and broadcast modes will be deployed in schools, colleges, universities, libraries, science museums, and individual homes. The initial aim will be to expose educational information providers to the system and encourage them to create educational content. Some public exposure will be obtained through libraries, museums, and home use.

The TVOntario educational network broadcasts 16 hours per day, 7 days per week and potentially covers about 85% of Ontario's 8.3 million people, utilizing 9 television transmitters.

The broadcast trial started January 11, 1980 and is operating during network hours. By April, we anticipate a nominal page capacity of 300 to 500 pages with about 20 percent devoted to OECA purposes.

The remaining pages will be used by other educational institutions and information providers in order to provide a broader spectrum of service. For example, a broadcast cycle could include: news, weather, financial markets, sports, etc. We do not intend to carry information of a non-educational nature, once other broadcasters start offering general teletext services. In terms of information related to OECA's activities, we would carry program listings, organized by time but also by subject area, program notes and teachers' guides, program prospectuses and so forth. News concerning education such as school bus status, school administration, and educational job opportunities would be carried. Other educational institutions will provide pages concerning their course offerings, course registrations, correspondence courses and other distance education.

In addition, we intend to offer Telidon materials directly related to the television program. (Captioning for the hearing impaired, and multi-lingual subtitles are simple examples. However, we believe that methods will be found where each medium reinforces the other in terms of conveying learning experiences.

In addition to integrating Telidon and television we intend to inter-relate the broadcast and interactive modes of Telidon.

The 55 terminals noted above will be able to access a 10,000 page computer facility in Toronto via telephone circuits. This arrangement will enable us to explore the advantages of the interactive mode and to examine the interrelationship between it and the teletext mode.

The information content of these interactive trials will tend to be all educational, since users will hopefully have access to other data bases with generalized information. Later on, we will describe some of the interactive applications we foresee. We believe they will tend towards information retrieval, computer assisted instruction, computer managed learning, heavier use of graphics and symbols, and the involvement of educational institutions in the mediation of learning materials.

In the near future we are slated to participate as an information provider in the Bell Vista trial, which is described elsewhere in this conference. Bell will be utilizing 1000 interactive terminals and a 100,000 page computer to be located in Toronto. In addition to creating content for the Vista data base, we anticipate acting as an umbrella IP for smaller educational institutions in the Vista trial. We are hopeful that our 55 terminals will also be able to access the Vista data base.

Finally, we have reached agreement in principle to participate in the Canadian Cablesystems Telidon trial. Cable television systems in Canada, with penetrations in the order of 67 percent of urban populations represent an interesting viable alternative for the distribution of interactive and broadcast Telidon. By utilizing the vertical interval on one of their cable channels, they can duplicate a broadcast Telidon system. By using a full television channel they can step up the transmission rate by a factor of 250 over teletext, assuming they have the computer capacity. With the advent of two-way cable, they can offer interactive services.

3.   OBJECTIVES OF THE FIELD TRIALS

With such a brand new technology and with very little experience in terms of applications of public information dissemination systems, our field trial objectives are diverse and wide ranging.

We hope to find the answers to a lot of questions; questions in technology, management of information, development of educational applications and the evaluation of user response.

3.1 Technological Objectives

In the technical area we are using the TVOntario broadcast
network to transmit Telidon in the teletext mode. We are
working with DOC to determine the optimum data transmission
rate under North American television system propagation conditions.
TVOntario transmitters operate at UHF and VHF frequencies
in urban and rural situations, and on mountainous and flat terrain.
A variety of distribution systems are used including microwave,
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as Vertical Interval Test signals (VITS), Source Identification
signals (SID), and PBS Captioning signals (Line 21) on an integrated
or time-shared basis. The objective is to make optimum use
of the available vertical interval.

3.2 Information Management

We are concerned about several aspects of information management,
in particular; creation of pages and sequences, organization
of data bases, dissemination of materials and presentational
considerations.

Information management appears to be the most labor intense
and costly aspect of any videotex service.

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news, weather, commodities, etc.

Under organization of data, consideration will be given to various indexing schemes, tree structures, broadcast cycles, accessing techniques, and relative versus absolute referencing.

Under dissemination of data we are concerned not only about the logistics of the broadcast cycle but also with the interrelationships between interactive and teletext data, and the movement of data between various videotex data bases. Our intention is to use each mode of delivery to its advantage and to capitalize on the interrelationships.

Finally, under presentational aspects we will be examining the use of colors, formats, designs, waiting times, graphics, grammar, legibility, standard headers and identification.

3.3 Development of Education Applications

In the area of program content OECA is developing some materials specific to its own requirements, particularly as they relate to educational broadcasting, and noninstitutional education. In addition, we are developing sample materials for use by conventional educational institutions.

We will explore the role of the educational institution as an information provider both within the community and the institution itself. We are examining the role of the public library in providing public access to Telidon at least initially.

Educational information providers have been encouraged to regard Telidon as an educational medium in itself and to consider the design of program material accordingly. As a result, for example, less text and more graphics and 'animation' are being used to convey complicated mathematical relationships.

3.4 Evaluation

Our evaluation objective will be to attempt to get an initial user response to the technology, the software, and the applications. Although these field trials are not market tests, we hope they will enable us to lay foundations for indepth testing in future years. With a total of 55 terminals being moved through a variety of settings (homes, schools, colleges, universities, libraries and, museums) we expect to get a broad cross-sectional but preliminary response to Telidon in the educational context.

4. TELIDON AS AN EDUCATIONAL MEDIUM

As was stated earlier OECA considers Telidon to be an educational medium in its own right. A number of characteristics of the system contribute to that opinion:

- Hypothetically at least Telidon could be as ubiquitous as television sets or telephones. It has, therefore, the potential of delivering educational experiences to anyone regardless of location or time.

- Telidon's interactive capability allows each learner to proceed at his own pace with periodic feedback on progress.

- Its graphics capability enables the provision of a wide range of educational subjects including for example:

    - music scores
    - charts and graphs - economics, business, etc.
    - symbols, equations - maths, sciences, chemistry
    - cartoons - political science
    - maps - meteorological, geography.

- The ability to provide pages that unfold at a controlled rate, focuses attention and paces the learning experience.

- The educational effectiveness of real live data must be noted. Information such as weather, economic reports, stock markets, news is considered very useful.

5. OECA APPLICATIONS OF TELIDON FOR EDUCATION

OECA projects a series of applications organized in order of increasing complexity.

5.1 As a Complement to Educational Television

As mentioned earlier, OECA broadcasts educational television 16 hours per day for audiences ranging from pre-school to senior citizens. Typical applications include:

- broadcast listings, including critical reviews;
- specialized schedules organized by subject area or grade level;
- program notes, teachers' guides, discussion questions and answers;
- captioning for hearing impaired or foreign languages;
- promotion of support services such as seminars, workshops, available materials;
- write-in, phone-in, and now videotex-in for further information.

5.2   As an Alternative to Conventional Print Processes

OECA currently spends about $500,000 per year on printed
materials. With newsprint going up, postal rates going up and
distribution times getting longer, electronic publication becomes
more interesting. Lacking a Telidon terminal population out
there, however, it is not yet possible to postulate a cross over
point. Some electronic publications might include: catalogues,
bibliographies, prospectuses.

5.3   Dissemination of Educational Information

In Ontario weather conditions sometimes cause schools to be
closed or school buses to be stopped. Especially in rural areas,
information of this nature is very important. Less crucial
but also useful would be administrative information such as
curriculum information, school registrations, educational job
opportunities, appraisal instruments, etc., plus real time data
such as news, weather, stocks, consumer, agriculture, and nutrition
information.

5.4   For Information Retrieval

- retrieval of information from data banks
- educational research, reference materials
- bibliographic information, commercial data banks.

5.5   For Interactive Learning Programs

- Correspondence courses could be individually paced. Responses
  to tests and examinations could be keyed in.
- Computer assisted learning programs could be adapted
  to the Videotex tree structure.
- Computer managed learning using ETV to present materials
  and CML to test students, and provide individual responses.
- Educational quizzes and games.
- Course content, exams, answers, results, diploma.

6.   FUTURE DEVELOPMENTS

There are several applications of Telidon that appear to be within
the capability of the technology that are not yet developed. The
following would be of particular interest to educational information
providers.

6.1   Telidon With Audio

The addition of an audio track would enhance the use of the
medium. With voice synthesizers we could even dispense with
the visual display of text. However, we are not advocating

this. Obviously work would have to be done on the tradeoffs between information capacity devoted to audio and that devoted to data. We think it would be a useful development in modes where it is technically feasible.

6.2 Telesoftware

The telesoftware concept has already been demonstrated in the U.K. We believe the concept has great potential in two respects, first in relieving the loading on communications channels, and second in delivering interactive learning packages to the user. Telesoftware could greatly enhance the "apparent" interactive quality of the broadcast mode.

By selective indexing of broadcast pages, it would be possible to have a wide range of sequences delivered only a few times a day, with would-be-users capturing and storing the desired programs.

Current microcomputer techniques using audio cassette recorders makes extended local storage a simple affair.

6.3 Full Channel Transmission

Full channel transmission after hours or on unused cable channels affords a very economical way of delivering large amounts of data. The major requirement would be a host computer with sufficient data capacity and speed to meet the demand and of course some form of automatic local storage.

6.4 Alphabetic Keyboards

The main reservation that the institutions with computer assisted instruction programs raise in adapting their programs to Videotex, is the rigidity of the numeric tree structure. It appears to be a matter of time and economics before Telidon terminals appear with full alphabetic keyboards enabling more flexible interactions with data bases.

6.5 Hard Copy Printers - Addressable Terminals

Once again the constraint appears to be economic. With hard copy printing available Videotex could be used to create tickets, coupons, receipts, examination papers, and even diplomas, although in the broadcast mode it would be necessary to address particular terminals.

6.6   Common Video Space

With Telidon it is technically possible for two terminals to communicate directly utilizing a common video space. This opens up the marvelous possibility of leaving messages for your children on the TV screen. It would also facilitate dialogues between student and teacher, joint problem solving and so forth.

7.   INTEGRATED APPROACH

As educators and broadcasters we can see the need for both interactive and teletext modes. With an integrated approach you end up with a larger potential audience and a wide range of data -- assuming the financial premium of a multi-mode terminal does not inhibit acquisition. Obviously broadcasters if they remain as such, (and there is some question about the future in North America) would not be interested in selective dissemination of data. Conversely commercial information services need a payment mechanism and therefore are not interested in the teletext mode. Perhaps the interim solution is a terminal that is "plug-adaptable" to either mode until the economies of mass production take over. This way a user could at least upgrade his terminal.

What then are the relationships between the broadcast data base and the interactive data base? To a certain extent this depends upon who is going to pay for the data. Telextext data are in effect sponsored by the broadcaster, the advertiser or service agency that wishes to deliver it to the user. The interactive mode can also deliver information at no charge but it is inherently a more expensive process.

From OECA's point of view, we see teletext being used for information that is topical, transient, and of broad general interest. Conversely, we see information of a permanent nature, or more specialized nature residing in the interactive data base. We would hope that interests kindled on teletext could easily be pursued in more detail in the interactive mode. This implies cross references in both data bases. To a certain extent the teletext service could include a multi-page menu for items in interactive hosts. We would hope that data in the interactive host can be easily transferred to the broadcast host. This implies that data are formatted identically and use the same headers. renumbering of pages is undoubtedly necessary since the broadcast cycle does not require the numeric power of the interactive mode.

Given the cost of transporting data over distance (unless we use satellite) it is likely that access to a given interactive host will tend to be regional rather than national or provincial. In due course, computer centers will spring up in all regions. However, it will be more difficult for sparsely populated regions to support the cost of large host computers. Thus it may be for some time that teletext will carry information of a national or provincial nature and more regional information will be found in the interactive base.

S.   EVALUATION

Finally we come to our intentions regarding evaluation. Bearing in mind that we are undertaking field trials and not market tests, we are not looking for rigorous results. Rather, we are attempting to develop and demonstrate a new medium, inform the public in a preliminary way and stimulate public institutions to examine their potential role regarding Telidon.

We will use questionnaires chiefly to seek people's preferences in the following areas:

o   acceptable waiting times for various modes,

o   educational effectiveness of materials offered,

o   impact on television viewing and the educational experience,

o   relevance of content,

o   organization of content,

o   types of information preferred on various modes,

o   technological efficacy of systems,

o   reliability of systems,

o   impact on institutional processes,

o   sociological impacts,

o   special applications such as captioning for the deaf.

9.   CONCLUSION

We welcome this opportunity to discuss our perceptions of the potential educational applications of Videotex systems. We would be happy to establish continuing contacts with educational institutions everywhere so that we might enter into dialogue and share results more broadly.

Joy L. Wilson
Telidon and Education Project
OECA

TELIDON, OECA and Public Libraries

The eighties may well be remembered as the decade when the electronic information revolution burst from the safe, specialized confines of business and academe into the competitive public arena. Whether viewed with a visionary's delight or a fatalist's despair, the recent union of computers and home televisions has resulted in a new breed of technology, generically called videotex, when wire-linked or teletext when broadcast.

These information systems are now in operation on a limited basis in some countries - notably Great Britain and France. In Canada, the federal Department of Communications (DOC) has developed a sophisticated version, Telidon, that combines alphanumeric text with an advanced graphics capability. One unique aspect of the system is that it's accessible to users through two different types of retrieval modes. In one mode, information or data can be transmitted from the computer to the television set via a telephone line (similar to such commercial information retrieval systems as the New York Times Data Bank). This is generally called the "interactive" mode of transmission. In the alternative mode, the data is broadcast over-the-air or via cable lines in the same manner as TV signals.

In Europe, these two modes of transmission are available as separate services. With Telidon, however, both methods can be used separately or combined. This is an important difference because each mode of access offers distinct, but compatible, services. Both offer a range of information that can be selected and displayed on TV sets according to the user's needs or preferences. The direct line or "interactive" mode offers a range of thousands of pages with some scope for entering data into the system because the set is directly "plugged" into the host computer.

The broadcast mode provides access to a more limited number of pages (hundreds rather than thousands). The user still has the choice of viewing only what is desired but cannot transmit an original broadcast response via the home TV set (just as one can receive but not create and transmit, a TV program from a home TV).

THE FIELD TESTS: TELIDON AND OECA

In 1980 the DOC, working with a variety of institutions, agencies, and governments across Canada, will conduct the first field trials of this new technology. Some of the trials will explore only the "interactive" or direct line mode of Telidon. The Ontario Educational Communications Authority (OECA), however, will be the first to explore both interactive and broadcast modes. Although the OECA has a special interest in exploring broadcast Telidon, the educational implications dictate the need to explore the

"interactive" mode as well. Rather than isolate the two modes, the challenge for OECA is to explore the flexibility of each, and to test the potential capacity of the two modes as integrated and complementary communications resources.

The host computer for the broadcast mode is located at the OECA headquarters in Toronto, while the interactive host computer is situated in Ottawa and will be relocated in Toronto by midsummer. During the first phase of the field test, up to 55 user terminals (consisting of a TV set modified to display Telidon pages, a microprocessor and a numeric keypad) will be installed in homes, schools, colleges, and libraries throughout the province. As the field trial progresses into the summer and fall, we hope to increase the number of terminals in use.

THE ROLE OF LIBRARIES:

Unfortunately, because of the limited number of terminals available during the test period, only a limited number of libraries will be involved. The selection of test centres will include some in large urban/suburban areas, some will serve a broad range of clients, some will serve predominantly ethnic populations, others will service rural areas. To compensate for the limited number of terminals, some libraries will have units for lengthy periods of time, while others will share units on a rotating basis.

In terms of cost the OECA, with the assistance of the DOC, will supply all necessary equipment. Even long distance charges inherent in the use of the interactive mode are funded to a certain level by the OECA. Libraries will be given so many hours of access(the choice of hours will be determined by library staff) and the libraries will pay for any excess time used.

In the broadcast mode, of course, there are no charges. Any library with a broadcast terminal within reach of the TVO broadcast signal will have free access to the broadcast data base. The cost to libraries will be primarily in the staff time required to monitor, supervise, and evaluate both staff and public reaction to Telidon.

During this initial test phase Telidon will evaluate both the educational and informational service provided, as well as the operational effectiveness of the system. OECA researchers have prepared questionnaires which will be processed by mail, telephone, and through the Telidon system itself, by statistical monitoring of what - and how frequently - information is accessed. The vital role of libraries in this evaluation process cannot be overstated.

Libraries, and individual librarians, will also play an important role as information providers. From the beginning of OECA's involvement in Telidon, two major objectives have been to develop the educational applications and content of the system. It makes sense that if one wants a system relevant to the needs of a

particular client, then one must encourage those clients to create that content. Thus, OECA has actively encouraged librarians to explore the potential of Telidon by creating content of specific use, either to library staff as a resource aid to reference work, or to inform the public about the library itself. (We have already received invaluable advice and assistance in these areas from many librarians, particularly those in the Scarborough system.) Also, the Faculty of Library Science at the University of Toronto has been actively involved in exploring the nature of the tree structure (essentially database management) with the project team.

INITIAL LIBRARY REACTION

The willingness of libraries to welcome a new, largely unknown, technology has been gratifying. Those of us involved in Telidon are all too aware of the technical, logistical, and intellectual frustrations inherent in working with a technology that is essentially a prototype of what is to come. Trying to bridge the gap between the reality and the potential is a constant challenge. At the same time we were "designing" the physical presentation of the information that appears on terminal TV screens; training librarians and others to use the equipment; we also had to collect or create, coordinate, and process actual pages of information for people to view.

The contributions from our librarian consultants have been more than welcome for two reasons. One is strictly pragmatic: we have a small staff and limited resources, yet must create a sufficient number of pages to satisfy the demands of a true

prototype systems trial. The second reason relates to another objective of the project, the creation of a consortium of information providers. The OECA has never intended to be the source - or even the main source - of all information stored in Telidon. However, by virtue of its educational mandate, and within the limits of our resources, we will provide as diverse a content as possible. And, in cooperation with other educational institutions and other suppliers of information, such as libraries, wire services, and other government agencies, the OECA will coordinate the development of an even wider variety of material. This will ensure that the field trial fulfills all Telidon's potential information roles.

In return for their assistance in supplying information, we are offering librarians, and others, the resources required to create, distribute, receive, and evaluate their own Telidon applications.

Is this access important? As a librarian, I will venture an entirely personal opinion and say, unequivocally, yes! There are many potential uses of Telidon in libraries - as aids in reference work, as a storage and retrieval tool for technical services, as an exciting new way of attracting and interacting with patrons for a variety of community uses, the list is endless.

Those familiar with the British library system's experience with a videotex system called Prestel may question my enthusiasm. Prestel is similar to Telidon in its interactive operation but is limited predominently to text content only, it cannot

reproduce maps, diagrams, etc. of the quality of Telidon. On
the positive side, the British librarians found Prestel useful
in providing up-to-date information for reference work particularly
in the areas of business and finance. Also, initially at least,
it attracted new clients into the libraries.

However, general staff reaction to the system's content has
been less than enthusiastic. There are indications that the
information on the system has little relevance to the needs of
library staff or clients. Prestel is a commercial, mass market
information system, for example, it's heavily into classified
advertising. Information providers must not only pay a hefty
fee for getting their material on the system, they also pay a
fee for accessing it. Not surprisingly, libraries have not
become heavily involved with the system as either providers or
as users.*

Obviously, with the OECA Telidon and Education project, the
quantity and diversity of content will be thin initially. However,
by involving libraries and other information providers in
the creation process, we trust the content will provide enough
material immediately relevant to the library community that
the users will be able to contribute constructive comments and
suggestions for expanding the service.

FUTURE TELIDON DEVELOPMENTS

Large quantities of diverse information already exist in databases

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* For further information about Prestel and Telidon, please see the
bibliography at the end of this article.

which could be handled by Telidon to provide broader public access than is presently available. However if Telidon is to act as a network system linking other databases to the public, these databases must be able to talk to the Telidon database and vice versa. This means either reprogramming whole databases to fit Telidon formats or, providing "interface" programs (translation programs that enable one set of computer formats/ languages to recognize and become changed into a different set of formats/languages). One interface that allows wire service material to be entered and displayed on Telidon has already been developed.

Another, of specific interest to libraries, is the interface for MARC-to-Telidon communication currently being written by staff at the University of Waterloo. The successful completion of this project could allow access via Telidon to the large bibliographic databases currently using the MARC library format.

If Telidon is to be fully integrated as a multipurpose technology in the future, it will be essential for libraries to develop the capability of using their Telidon terminals to create their own programs. The terminals currently in use have a numeric keypad to access information. Its limitations for input are obvious. There is in existence a prototype Telidon terminal with a full, built in, alphanumeric keyboard that can be used to create pages. Also, software has been written (but not yet fully field-tested) which will allow any standard ASCII keyboard attached to a DEC compatible computer to couple with a Telidon user terminal for creation of text-only pages. With these two

developments the potential for testing real information
networking, involving not only bibliographic data but all
kinds of information, is just around the corner. They also
reflect the desire of the DOC to establish Telidon as a
viable home computer system for those users who will want more
than just a basic information retrieval unit (for which a
numeric keypad is presently judged adequate.

The new terminals will allow people to interact both with
large data bases or to switch their terminals to a "local"
mode. In this local mode they will be able to write their
own computer programs or use special computer programs acquired
from an outside source such as OECA. The OECA, both through
the interactive and the broadcast forms of transmission,
will be able to deliver lengthy programmed learning
sequences to a user terminal for storage and later use in the
"local" mode.

More distant future applications include the possibility of
using an audio channel coupled to Telidon to provide audio-graphic
learning packages, and the potential to provide optional TV
program captions for deaf viewers.

FUTURE IMPACT ON LIBRARIES

Considering Telidon's present and future capabilities, it is
easy to project delightful visions of breakthroughs in adult
education, in enriched programs for the classroom or home, for
those physically isolated from institutional learning centres,

and so on. It is equally easy to succumb to the fatalist's
despair over freedom of information, the potential for an
Orwellian "computer conspiracy", and the impact on our
occupations.

As a cautious optimist I belive there will be enough concerned
people keeping a close eye out for potential social misuse.
As a reader, librarian and part-owner of a bookstore, I know
the magic of books will always ensure their existence. I
have no conflict, then, in welcoming the vision. I think it is
more than worth the social risks.

Certainly, in this electronic age, the role of libraries and
librarians will need to be reassessed - by the profession and
by the public - in terms of the types of service to be provided,
the need to share costs, and so on.

In sum, the potential impact of Telidon on libraries and
librarians will be determined by the involvement or apathy of
the profession itself, just as its social impact will be determined
by public response. Given the enthusiasm and support we have
received to date, I am hopeful that the vision will someday become
the reality.

For more information regarding the OECA Telidon and Education Project,
please write to us c/o OECA, P.O. Box 200, Station Q, Toronto M4T 2T1,
or call (416) 484-2930.

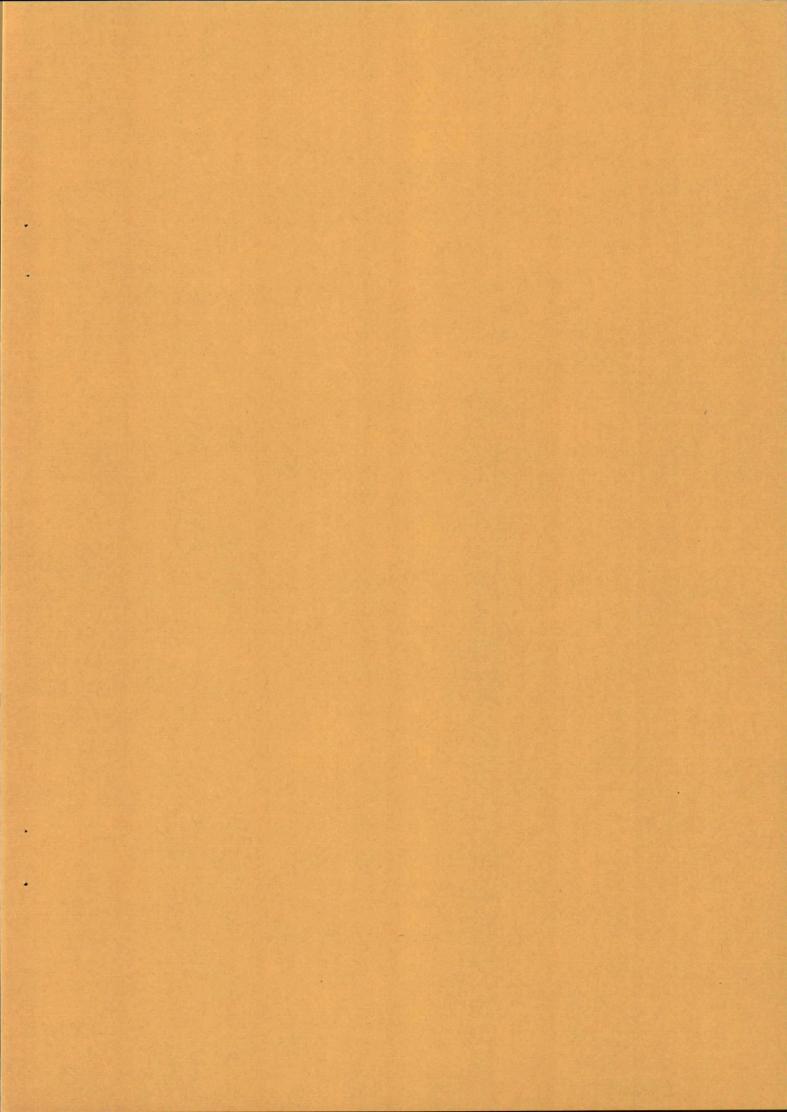Suggested reading:

Maxine Hattery. "Prestel in the Public Library." Informational
    Retrieval & Library Automation. Vol. 15 No.2.
    July 1979, p. 1-3.

John C. Madden. Videotex in Canada. Ottawa, Ministry of
    Supply and Services, 1979.

Rex Winsbury. The Electronic Bookstall. Push-button Publishing
    On Videotex. London, International Institute of
    Communications, 1979.

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31 January 1980

SUMMARY REPORT - MEETING OF JANUARY 30 1980

Attendance: Kathryn Michalski,Superintendent, Ontario School for the Deaf,
                              Belleville
               Elgin Vader, Ministry of Education Teacher Education Centre
                       for the Hearing Impaired, Belleville
               M. Cioni
               J. Wilson
               J. Syrett

Mrs. Michalski confided that she had had doubts about spending a day in
Toronto on the basis of sheer speculation about a new technology. After
the demonstration, however, she and Mr. Vader indicated enthusiasm for
the prospect of applying the technology to educational needs of the
hearing impaired. Mrs. Michalski's field of specialization is language
learning, and she would like to explore new approaches in circumstances
where the language of the learner has no basis in sound.

The visitors took with them our literature, giving every indication that
they would formally commit to involvement in the field trial, and develop
data base content by September. They expect to invite the Telidon project
team to a joint meeting in Belleville of various regional representatives,
perhaps at Loyalist CAAT, where a Telidon terminal will be available.

It was noted that centrex access at night to the host computer seems likely,
and that OSD is a residential school which could benefit from that
configuration.

John Syrett
Project Manager
Telidon and Education

Distribution:

J. Wilson
T. Thorne
P. Bowers
S. Birkenmayer
F. Gratzer
J. Thorsteinson
D. Watson
J. Syrett

11 December 1979

SUMMARY RECORD OF A MEETING IN THUNDER
BAY ON 3 DECEMBER AT 12:30 PM IN MT.
MCKAY ROOM, LAKEHEAD BOARD OF EDUCATION,
2135 SILLS STREET, THUNDER BAY.

Attendance: Kathryn Marcine   Churchill C&VI
              Ted Meyer   Fort William CI
              Russ Garrett   Fort William CI
              Dave Fredrickson   Churchill C&VI
              Paul Hyatt   Churchill C&VI
              Andy Trekours   Churchill C&VI
              T. Peet   Churchill C&VI
              Dale Mason   Instructional Materials Centre
              Gayle Rose   Churchill C&VI
              Don Prodanyk   Hammarskjold HS
              Larry Hansen   Confederation College
              Simon Tenhapel   Lakehead Board IMC
              Tom Goodman   Lakehead Board IMC
              Doug Gould   Algonquin Ave. P.S.
              Terry Axelson   Claude Garton P.S.
              Jim Black   Lakehead Board of Education
              Bob Angell   Lakehead University
              Don Watson   Lakehead University
              M. L. Cioni   OECA

1.   The purpose of the meeting was to familiarize those present
     with the Telidon technology and to describe the OECA field
     trial in detail.

2.   Discussion centered upon the following points:

     a) Production - how to get their material into the system?
        A description of the askii keyboard attached to the user
        terminal or to a standard askii monitor to create simple
        graphics and text was given. Lakehead University has a
        PDP 20/20 and Confederation College an IBM 371/25. It was
        suggested that they would require training on the system
        and asked if Joy could come out when the terminals arrived.

     b) Long distance charges. This proved to be a matter of
        concern. The Board of Education said that it could not
        make any funds available, that each school was on its own.
        After much discussion there was a consensus that a fixed
        sum of $30 - $50 monthly based on a sharing of a WATS line
        would be acceptable.

     c) Terminals. The group was enthusiastic and estimated terminal
        requirements for their area to be approximately 12. (Note: there
        was no representative of the Public Library present). It was
        stated that specific numbers of terminals could not now be given.
        Timing of when terminals might arrive was discussed. There was
        a feeling that September might be the best time in order to
        permit a period for preparing material. It was then suggested

that maybe 1 terminal could be allocated in February/March
so that people could have some idea of what other sequences
looked like. Mr. Mason will check with MOE to see if a
terminal could be hooked into the government line there.

3. The meeting adjourned at 3:15 p.m.

M. L. Cioni
Manager, Telidon Liaison

Distribution List:

J. Wilson
T. Thorne
P. Bowers
S. Birkenmayer
F. Gratzer
J. Thorsteinson
D. Watson
J. Syrett

29 November 1979

SUMMARY RECORD OF A MEETING WITH
REPRESENTATIVES OF THE YORK COUNTY
BOARD OF EDUCATION ON 29 NOVEMBER
AT 9:30 A.M. IN ROOM 603, 2180
YONGE ST., TORONTO

Attendance: S. Bacsalmasi
               B. Burnham
               Audrey Taylor
               Carol Wiltshire
               Gord Wells
               M. L. Cioni

1. The purpose of the meeting was to demonstrate the user terminal
    and RGP 500.

2. After the demonstrations discussion centred on the particulars
    of potential involvement of the York County Board in the field
    trial. Interest was voiced in the possible Telidon/MARC
    interface (because of some UTLAS PRECIS work). The Board has
    3 Toronto telephone lines and lines in various schools so that
    long distance may not be a factor. B. Burnham will investigate
    that more fully. Suggestions were made to put an entire
    semester's course work in one subject on the system to test
    its usefulness. Mention was made to the Aurora Public Library
    and Seneca College King Campus on sites within York County.

3. It was agreed that at their supervisors' and trustees' meetings
    participation in the field trial would be discussed and suggested.
    A tape of Telidon from the computer culture exhibition was
    loaned for the above meetings.

4. The meeting adjourned at 10:45.

M. L. Cioni
Manager, Telidon Liaison

Distribution List:

J. Wilson
T. Thorne
P. Bowers
S. Birkenmayer
F. Gratzer
J. Thorsteinson
D. Watson
J. Syrett

16 October 1979

SUMMARY RECORD OF A MEETING
WITH REPRESENTATIVES OF THE
HAMILTON SCHOOL SYSTEM ON
10 OCTOBER 1979 AT 10:00 A.M.
IN ROOM 603, 2180 YONGE ST., TORONTO

Attendance: Mr. R. Herd - Hill Park S.S. teacher
               Mr. D. Didur - Board of Education for the City of Hamilton

1. The purpose of the meeting was to demonstrate the Telidon technology
    and to discuss considerations for the participation of Hill Park
    S.S. in the field trial and as the site for a user terminal.

2. Mr. Didur explained that in Hamilton schools are organized in
    "families"; that is, a group of elementary schools and the secondary
    school which they feed are seen as a unit. The Hill Park "family"
    consists of Cardinal Heights, Burkholder Drive, Armstrong and
    Norwood Elementary Schools. These schools are also interested in
    the field trial. He mentioned that any expenses to be incurred by the
    Board during 1980 must be included in budget estimates by the end
    of November. He also suggested that consideration be given to
    OECA subsidizing long distance charges to a greater extent for the
    first month of placement to compensate for "learning" the system.

3. It was agreed that:

    a. Mr. Herd would solicit ideas for sequences from his colleagues.

    b. Mr. Didur would propose to his Board of Education that Hill Park
        be involved in the OECA field trial and be prepared to assume a
        portion of any long distance charges.

The meeting adjourned at 11:00 a.m.

Maria L. Cioni
Manager, Telidon Liaison

Distribution:

S. Birkenmayer
P. Bowers
F. Gratzer
W. Syrett
J. Thorsteinson - DOC
D. Watson
J. Wilson

11 December 1979

SUMMARY RECORD OF A MEETING
HELD AT CAMBRIAN CAAT ON
4 DECEMBER AT 10 AM, IN SUDBURY.

Attendance: Dianne MacEwan   Cambrian College
               Ramesh Gupta   "   "
               Bernard Brégaint   "   "
               Ernie Depatie   "   "
               Gordon Field   "   "
               Chris Bartlett   "   "
               Eve Kendel   Sudbury Separate School Board
               David Rowz   (not stated)
               M. L. Cioni   OECA

1. The purpose of the meeting was to describe Telidon and the
    OECA field trial.

2. Discussion followed as to the role of Cambrian in the
    field trial. The question of long distance rates was
    discussed at length. The College does have a WATS line
    and it was suggested that the WATS line could be used
    with an OECA subsidization for the increase of traffic.

3. The computer section of the college has a PDP 11/70 with
    320K memory and a PDP 11/20 which is virtually unused.
    The director of the computer section opined that part of
    the data bank might reside in the Cambrian PDP computer
    thereby negating long distance charges. An investigation
    of possible uses of the computer at Cambrian will follow.

4. It was noted that the blue production sheet (Document 5)
    did not list any business or technical categories.

5. The meeting adjourned at noon.

M. L. Cioni
Manager, Telidon Liaison

*Note: Cambrian has 2350 students full time and 7000 extension.
There are 2 campuses both within the greater city area.

Distribution List:

J. Wilson
T. Thorne
P. Bowers
S. Birkenmayer
F. Gratzer
J. Thorsteinson
D. Watson
J. Syrett

Memorandum

The Ontario
Educational
Communications
Authority

To   Distribution

From   J. Syrett

Date   June 7, 1979

Subject   Summary - Algonquin CAAT Conference

I attended the first day of the 2 day session. By contrast
with the Seneca Conference, OECA and Telidon was not
high profile, the focus being on CAI.

I got to meet:

Laurent Isabelle, President ACAAT
James Feeley (our Telidon contact)
Yolande McDonald, programmer
Roy Kirby, programmer
Bill Dykstra (Geo. Brown CAAT)
Jerry Fenkell ("   "   ")
Irvin Rubincam(again) OISE
Ted Davies, ACAAT(and a
consultant in computer programming)

While Irvin Rubincam of OISE made positive reference to us
in his remarks (citing a Telidon Teacher news service as one
service that a Computer Users Organization could assist), I
was surprised to hear Norman Williams, head of CAAT College of Regents
make a somewhat slighting remark in his luncheon address
to Telidon. He called it Telidyne, and said it sounded like
a solution in search of a problem. The remark was made in
the context of a gung-ho defence of CAI in Ontario, "the
best in the world."

Since we're trying to interest CAAT s in a consortium, it would be
desirable if their chief advisor (a very persuasive and able
man, apparently) were to be persuaded to suspend judgment.
Question: Does anyone at the Exec. Ctee. level, OECA, know
Norman Williams well enough to acquaint him personally with
the merits of our project?

Re Ted Davies
Dorothy Phillips of DOC teed up a meeting with Davies for us.
The meeting seemed pointless since Davies is submitting an
"unsolicited proposal" to DOC to work with NRC in developing
an English Studies program sequence that calls for the use of
a keyboard. I said that if we're still going strong in 1 or 2
years, we'd be glad to help provide a testing opportunity
for his project.

Re programmer literature:

I brought back several print pieces on effective programming.

cc. P. Bowers
     M. Cioni
     J. Wilson

SUMMARY RECORD OF A MEETING HELD WITH

THE ONTARIO INSTITUTE FOR STUDIES IN EDUCATION

8 March, 1979 at 252 Bloor Street West

at 2:30 p.m.

Attendance:

Dr. C. Pitt, Director, - OISE
Mr. G.F. Scott, Project Director,
                Dept. of Computer Applications, - OISE
Mr. I. Rubineam, Computer-assisted Instruction, - OISE
Mr. P. Bowers, General Manager,
                Operations Division - OECA
Dr. L. Miller, General Manager,
                Research and Planning Division - OECA
Mr. J. Syrett, Telidon Project Manager, - OECA
Miss M. Cioni, Manager, Telidon Liaison, - OECA

1. A meeting was held with representatives from OISE and OECA
to discuss involvement of the former in the Telidon project.
Mr. P. Bowers outlined OECA involvement in Telidon and
explained the technical aspects of the system.

2. Mr. G. Scott, OISE, explained that OISE was involved in
computer-assisted instruction; that is, there are 300 terminals
on the network with four host computers. He commented that
their four CAN NET computers were compatible with the POP 1160
(the DOC host computer). It was felt that OISE should
examine using the broadcast mode of Telidon.

3. The meeting concluded with agreement on the following:

   a) OISE is interested in examining the broadcast mode
   of delivery of Telidon

   b) OECA will work with a consortium of OISE members as
   users of the Telidon system. OISE will write to
   Seneca, Humber, Centennial, George Brown and
   Sheridan Community Colleges to sollicit their
   representation on an OISE committee to investigate use of
   the Telidon system.

c) It was felt that a presentation could be made to the
    Ministry of Colleges and Universities for a grant to
    fund the use of Telidon.

d) OISE expressed interest in Telidon with audio,
    telesoftware, cable distribution of Telidon, security
    of data and the proprietory interests of those
    involved in programming.

e) In reply to a question on availability of CAI surveys,
    OISE said that although many existed, little evaluation
    had been done.

f) Mr. Scott will contact OECA once he has established
    the group of potential Telidon users.

The meeting was adjourned at 4:00 p.m.

Maria Cioni
Manager, Telidon Liaison

c.c. P. Bowers
      S. Birkenmayer
      L. Miller
      J. Syrett

July 20, 1979

Summary Report - meeting at Geo. Brown C.A.A.T., July 19

Present: Lloyd MacKinnon, Dir. Info. Systems
           Dick Sash, staff, Info. Systems
           Gary Watson, Registrar
           Bob Struthers, Dir. Continuing Education
           Barbara Ferrett, Dir. Student Services
           Irv. Rubincam, OISE
           John Syrett, OECA

The meeting was convened by Dick Sash, who (on behalf of Geo. Brown) is
co-ordinating meetings that relate to computer applications, including
Telidon.

I distributed the summary of our project's anticipated stages of development.
The group appeared to be focused primarily on adult education information,
and wanted to know what investment of time and resources on Geo. Brown's
part would be involved in making information available on the system.
My response was that that depended on
            (1) what service they hoped to offer on the teletext facility
            (2) what service they hoped to offer on the interactive facility.
We discussed these two facilities. It is apparent that this group is still
grappling with the function or service they wish to provide on these
facilities, -- whether a form of awareness-raising re Geo. Brown courses,
or a data-base that permits rather detailed search re the content of indiv.
courses. Also, they have only begun to come to grips with the 40 x 20
grid limitations (number of words per page) and what that means; the use
of key-pad numbers to access information, etc.

My mention of the fact that initially only 10 or so user terminals may be
available by September, and that most of these would be in the hands of the
Information Providers, raised a question whether they might better be deployed
among users. I explained that there is no necessary contradiction between
the two. The group was particularly favourably disposed to the placing of
some terminals in public libraries.

Irv. Rubincam raised the question of the role of the co-ordinating body for
all Metro colleges in the supply of adult ed. information; also, the role of
the Ont. Assoc. for Adult Ed. The group will consider these questions
before convening the next meeting, expected in August.

cc.   M. Cioni
           P. Bowers
           S. Birkenmayer
           D. Watson
           J. Wilson
           J. Thorsteinson - DOC

SUMMARY RECORD OF A MEETING
HELD WITH REPRESENTATIVES OF
GEORGE BROWN COLLEGE ON 21 JUNE
1979 AT 4:00 P.M. IN ROOM 603,
2180 YONGE ST., TORONTO

ATTENDANCE:

George Brown CAAT:

        Mr. Ian Cameron
        Mr. Wm. Dykstra
        Mr. Jerry Fenkell
        Mr. Furstien
        Mr. Light (president)
        Mr. Sorenson

OECA:

        M.L. Cioni
        J. Syrett

1. The meeting opened with a demonstration of the RGP 500 and the Vista terminal. Following this the group re-convened in the fifth floor boardroom to see Mr. Dykstra's presentation on the "Computer Managed Training" program established at George Brown.

2. Mr. Dykstra"s presentation raised several interesting points:
   - computers are used to monitor where students are in the progam i.e. they handle administrative tasks
   - computers are adjunctive to teaching
   - there is a need for macro, mini and micro computers in a computer managed system

3. Mr. Fenkell stated that the head of the Council of Regents had said that each college could explore on their own the area of new technologies. Mr. Fenkell sees Telidon as a means by which education can be individualized and supplied to each home.

4. President Light indicated his enthusiasm for joining with OECA in the Telidon field trials.

5. The meeting concluded with agreement upon the following:
   a. George Brown will send a letter to OECA indicating their willingness to participate in the Telidon field trials
   b. User terminals will be made available to George Brown
   c. A meeting will be convened shortly to explore the arrangements for a formal agreement between OECA and George Brown; Bill Dykstra will will be the contact for George Brown.

The meeting adjourned at 6:20 p.m.

M.L. Cioni, Manager
Telidon Liaison

MC/jw

Distribution List:

S. Birkenmayer	J. Thorsteinson - DOC
P. Bowers	D. Watson
J. Syrett	J. Wilson

21 December 1979

<u>Summary Report - Meeting with U.W.O. reps.</u>

Present: Al Lott, Faculty of Ed. (519) 679-3824
          R. Morton, Univ. Library System 679-3164
          C. Willis, London Board of Education

          J. Syrett, OECA

These educators have an excellent background in computer-assisted
instruction, and are clearly "ready" for a technology that permits
expeditious creation and display of good graphics in colour.
They were impressed with the user terminal, and even more so
with the RGP 500. Mr. Lott's reputation as a creative developer
of programmed learning sequences is a good augury for our being
in receipt of some good data base content, and I particularly
stressed the need for such content, especially at the public/
high school levels.

Clearly, if an entry terminal were available in London, work
would be proceeding within a matter of days.

The group was supplied with appropriate literature, and undertook
to get back to us promptly with an indication of their commitment
to the project.

cc. P. Bowers
     J. Thorsteinson
     M. Cioni
     J. Wilson
     T. Thorne
     F. Gratzer
     S. Birkenmayer
     D. Watson

22 November, 1979

SUMMARY RECORD OF A MEETING WITH DR. F. TAYLOR,
CARLETON UNIVERSITY, ON 15 NOVEMBER AT 4:00 PM
IN ROOM 459, LOEB BLDG, CARLETON, OTTAWA

Attendance: F. Taylor
              M.L. Cioni

1.   The purpose of the meeting was to familiarize Dr. Taylor with
     the OECA field trial and Telidon. He explained his interest
     in 3-dimensional graphs and his recent viewing of the White
     House Information Retrieval System.

2.   Dr. Taylor agreed to coordinate the interests of Carleton
     (with Donald George, continuing education and Robert Knights,
     psychology). He proposed 2 terminals for Carleton, one for
     the school of International Studies and one for the university.
     He suggested that Stats Canada information be used if possible.
     The possible cost of long distance to the host computer was
     seen as a major problem.

3.   The meeting adjourned at 5:30 p.m.

M. L. Cioni
Manager, Telidon Liaison

Distribution List:

J. Wilson
T. Thorne
P. Bowers
S. Birkenmayer
F. Gratzer
J. Thorsteinson
D. Watson
J. Syrett

Memorandum

The Ontario
Educational
Communications
Authority

To	P. Bowers
From	J. Syrett
Date	26 October 1979

Subject

Waterloo meeting (see Maria's summary)

The meeting was unusual in that it had three distinct points of focus.

1. Paul Beam, Professor of English, is looking at Telidon as a new medium, and is reacting to the system components in terms of their adequacy to support a really effective medium of communication. He is critical of the use of key-pad and of the quality of graphics. Nevertheless, he aspires to put something really worthwhile on the system (with student help). How soon he can do so is related to the date of arrival of the first of three RGP 500s (expected Feb). I'd like to have his students use our paper grids to design a complete sequence this Fall, and enter it by February or before. He is willing in due course to do commissioned sequences for us at low rates, and thus Waterloo is potentially a small production centre.

2. Eric Manning, Professor of Computer Sciences, is the man most involved in the elaboration of tasks under a contract with DOC, which wants to make Waterloo (with its DEC computers) a centre of alternative expertise in Telidon hardware/ software. He appears to be working on concepts we've brought up before -- terminal-to-terminal communication, host-to-host, accessing costs, etc. It is not clear to me whether or not this means we could have Waterloo solve some of our technology problems.

   There seems to be agreement that what Information Providers need, re technology, isn't necessarily what DOC assigns priority to. The way to handle that may be via VISPAC.

   Over-all, the impression I have is that Waterloo has little knowledge of the present configuration of the system -- user terminal, role of VISPAC, etc. etc. -- but is nevertheless pushing ahead with some broad initiatives.

3. Janet Thorsteinson was supplied with 3 copies of the "minutes" of our Oct. 16 meeting.

   I raised several questions. Re the contract, see previous memo. Re the acoustic coupler, I was advised to check with Herb Bown re the systems implications and I was somewhat disheartened to hear that the dedication of acoustic ports on the 11/60 would be under Bell's control.

An offshoot of the question was whether any of the 50 decoders would be Mark II, therefore need no modems. Answer, none would be Mark II, since all the teletext decoders would be retrofits of Mark I.

Re cost of operating terminals, no study of use of data-pac is being pursued, because of an assumption that Telidon ultimately would not require long-distance connections. Thus, for the foreseeable future, all interactive field trials will bear the cost of long-distance.

cc. M. Cioni
    J. Wilson
    F. Gratzer
    T. Thorne

August 21, 1979

Summary Record of Meeting Held August 16/79

Attendance: Susan D'Antoni   Distance Education, Ryerson

              John Syrett   OECA
              Joy Wilson

1. Delivery of Definite Information Packages

    Discussion focused on the nature and time lines of inputting Ryerson
    material. Susan will undertake, with one Ryerson support staff, to
    produce both broadcast-oriented and interactive-oriented pages, starting
    immediately. By August 30th she hopes to have some pages done, and will
    arrive here with an input person to be trained on the RGP 500 - inputting
    to start that day.

    There will be two sets of information produced, one for input and display
    during the fall, one for input during fall with final completion ready
    for January broadcast date.

    The first set of information will be a directory of continuing education
    courses available at Ryerson, with at least 2 pages of graphics (maps of
    Ryerson and its layout). There will be an introductory "teaser" page
    to the information - which will be a lead into a couple of pages of
    general information suitable for broadcast; pages suitable for the interactive
    mode will also be developed. It is anticipated that these will be complete
    by the middle or end of September.

    The second unit of information, projected for entry during the fall - with
    revisions if feedback indicates any - with the whole unit, in final form,
    ready for both broadcast/interactive use by January, will comprise pages
    dealing with adult education courses throughout Ontario. Susan has to
    clear use of this information with the Canadian Association of Adult
    Education, but feels there will be no trouble in doing so. This information
    is unique in that it is not widely available in any form at the moment.

2. Potential Information Packages

    a) Susan will discuss with the Director of the Canadian Nurses Association
        the production of a nutrition package aimed at general public awareness
        of nutritional needs (eg. recipes for the day leading into informational
        sequences on nutrition).

    b) Susan will also discuss a nutrition package - for children - with her
        contacts at the University of Toronto's Institute for Child Study.
        She feels they will be very interested.

3. <u>Ryerson Follow-up</u>

Susan will ask Tony Gifford re the possibility of involving the Graphics Department (staff and students) in the production of material (especially cartoons); this is a follow-up on previous discussions held with Tony (ref. August 8 meeting).

4. <u>Research Evaluation</u>

In passing, Susan mentioned that she knew Lynette Gillis of Research and Planning and will be seeing her on a Ryerson matter. As Susan is also interested in the initial evaluation of the system (during the fall) she felt it might be useful to explain to Lynette what she would hope to learn from this evaluation. Without putting a "Ryerson-oriented" bias into the initial evaluation, this interchange will probably be useful to all involved; it was indicated, therefore, that this interchange would not cause problems for us.

Distribution List:

S. Birkenmayer
P. Bowers
F. Gratzer
J. Syrett
J. Thorsteinson
M. Cioni
D. Watson

SUMMARY RECORD OF A MEETING
HELD WITH REPRESENTATIVES OF
RYERSON POLYTECHNICAL INSTITUTE
ON 1 AUGUST 1979 AT 3:00 P.M.
AT THE DEANERY, RYERSON, 50
GOULD ST., TORONTO

Attendance: Tony Gifford, Dean of Applied Arts 595-5409
             Ted Wisz, Dean of Technology 595-5102
             Susan D'Antoni, Continuing Education 595-5043
             Dean Tudor, Dean of Library Arts 595-5285
             Mitch Kallour, Computing Centre 595-5056
             Raj Nagendra, Math and Physics 595-5171
             Absent: Bob Gardener, Journalism

             M.L. Cioni OECA

1. The meeting began with a brief explanation of the technical aspects of Telidon
and of the re-vamped plans for the field trial. I emphasized that Ryerson was
on our priority list for providing content in the system and, consequently, would
receive a user terminal from the initial batch. This "preferred position" seemed
to please the group and they responded accordingly.

2. There was agreement that Ryerson would put pages onto the system by September.
It was deemed essential that the Ryerson technical people familiarize themselves
with the Telidon equipment before the sort of content could be decided. The
technical assessment would include the possibility for development of software
interface for remote entry of their information from their PDP 11/34, the cost
of modems, lines, the feasibility of incorporating software development into a
class project etc.

3. Once the technical assessment was completed, Ryerson would organize its
different areas to supply content for both broadcast and interactive modes
as well as the labour to enter the material into the system.

4. Some principles, that would be included in a formal agreement between OECA
and information providers, were discussed. Mr. Gifford indicated that he would foresee
no problems as long as it was made quite clear in any Agreement that the field
trial was an "educational experiment". It seemed to me that Ryerson, in the
person of Tony Gifford, was motivated by political reasons to support OECA in the
field trial. It is regarded as essential by Gifford that Bernard Ostry and DOC
see Ryerson as a main contributor to the success of any teletext field trial.
On the other hand, if the field trial did not go well one could quite confidently
expect Ryerson to pull out.

Eight August at 3:30 p.m. was the time set for a Ryerson demonstration of Telidon
at OECA.

The meeting adjourned at 4:45 p.m.

M.L. Cioni, Telidon Liaison

Distribution:

S. Birkenmayer   J. Thorsteinson   fyi. Dr. Parr
P. Bowers   D. Watson
F. Gratzer   J. Wilson
J. Syrett

SUMMARY RECORD OF A MEETING
HELD WITH REPRESENTATIVES OF
YORK UNIVERSITY ON 27 JUNE 1979
AT 4:00 P.M. IN ROOM 603,
2180 YONGE ST., TORONTO

Attendance:

J. Durlak	- Social Science Div., York University
P. Roosen-Runge	- Head, Computer Science Div., York University
F. Gratzer	- OECA
J. Wilson	- OECA
M. Cioni	- OECA

1. After a demonstration of VISTA and discussion about home micro-computers, the meeting focused on York's interest in Telidon.

2. Mr. Durlak suggested that his media class might do papers on various aspects of Telidon. In the Computer Science Division, Mr. Roosen-Runge suggested three possibilities:
    i)   working on a micro-computer/Telidon interface
    ii) inputting from a local computer i.e., formatting through a local computer into the Telidon language
    iii) ways of providing information with local memory and storage capability

3. Mr. Durlak mentioned that he was co-ordinating the Urban Studies Symposium in March/April 1980. The theme will be community/communications/computers. He would like to have a Telidon demonstration at this conference.

4. York University stated that they would like to have a terminal.

5. The meeting closed with agreement that the representatives from York would send in an outline of the various projects they had and, that, further discussion would ensue after that.

The meeting adjourned at 6:10 p.m.

M.L. Cioni, Manager
Telidon Liaison

Distribution List:

S. Birkenmayer
P. Bowers
J. Syrett
J. Thorsteinson - DOC
D. Watson
J. Wilson

MC/jw

SUMMARY RECORD OF A MEETING

WITH DR. J. DARBYSHIRE

QUEEN'S UNIVERSITY

KINGSTON, on 15 MARCH /79 - 1:00 p.m.

ATTENDANCE: Dr. J. Darbyshire, Queen's University
               Miss M.L. Cioni, Manager, Telidon Liaison, OECA
               Mr. M.L. Lewis, Associate Director, Government
                        Industry Liaison, CTV

1. Dr. Darbyshire is presently involved in two studies on the
    needs and application of communications for the hearing
    impaired. One study, funded by DOC, is national in scope;
    the other funded by Bell, covers Ontario and Quebec.

2. I asked Dr. Darbyshire whether or not (i) Queen's University
    would be interested in the Telidon project since Telidon
    had closed captioning capabilities and (ii) if the university
    would have funds available for the project.

3. Dr. Darbyshire indicated his interest in Telidon (especially
    after Mr. Lewis indicated the costs involved for the private
    sector and the impossibility of covering those costs). He said
    that other sectors of the university were also interested but
    that no funds were available for any Telidon trials.

4. During the ensuing discussion I proposed that Dr. Darbyshire
    approach DOC for funding of a "second" part to his study i.e.
    the practical testing of findings arising from his survey.
    Also, the Ontario Medical Association might be a source for
    finances.

5. The meeting concluded with agreement upon the following:

    a) Dr. Darbyshire and other divisions of Queen's University
        would be interested in discussing possible projects for
        the Telidon field trials.

    b) Dr. Darbyshire was confident that he could find funding
        for such projects.

    c) A meeting to discuss further this matter would be set up
        with OECA.

The meeting adjourned at 3:00 p.m.

M.L. Cioni
Manager, Telidon Liaison

12 December 1979

Attendance:

	Lucille Galloway	Head Librarian
	Justin Harraschuk	Head of Branches
	Linda Barton	Reference Department
	Judy Walker	Head of AV
	Pat Webber	Director of Public Relations
	Angus McDonald	Business Administrator
	Maria Cioni	OECA
	Joy Wilson	OECA

1. The purpose of the meeting was to discuss the involvement of Burlington Public Library in the Telidon and Education field trial. The group was very interested in the possibility of having a user terminal in the library; a possible location was shown to the OECA representatives. Possible types of content in the data bank were discussed.

2. It was pointed out that Burlington Public Library has a Oakville toll-free phone line available for use during the field trial.

The meeting adjourned at 12:00 p.m.

M.L. Cioni
Manager, Telidon Liaison

Distribution List:

J. Wilson
T. Thorne
P. Bowers
S. Birkenmayer
F. Gratzer
J. Thorsteinson
D. Watson
J. Syrett

SUMMARY OF MEETING HELD AT OECA WITH
METRO TORONTO LIBRARY PLANNING BOARD
REPRESENTATIVES 1 AUGUST 1979

Attendance: Pat Zuist Head of Planning
               Margaret McGrory Systems Planner
               Anne Moek General Reference
               Judy Christian System Unit
               Josephine Tsui Manager, Systems Unit

               Joy Wilson OECA

Meeting opened with demonstration of the Bell VISTA system (in lieu of
nonfunctional Telidon user terminal) and closed with demonstration of the
RGP 500 input terminal. They were very impressed with the potential of
the system; discussion focussed on the use of the system for continuing
education directories, library reference and cataloguing applications,
the need for interface programs for translating library systems onto
Telidon, and their request for a Telidon user terminal to be placed in
the main Metro Toronto Central Reference Library.

As a main provider of continuing education information through the
MetroDoc directory, they were concerned with the possibility of being
asked to transfer this information (which they receive from all the
CAATs) to a Telidon system. We discussed the problem of an interface
program to facilitate this transfer - they could not financially afford
to fund an interface and I pointed out that neither could the OECA or
DOC. However, I mentioned the high interest and commitment of Ryerson
and suggested that the interface program might well be handled (produced
or funded by) these institutions - most likely a problem which could
be negotiated and implemented for the second phase of the project (in
1980-1981). I mentioned that in this pilot stage of the project, sample
pages of continuing education courses would be put on the system.

Regarding library cataloguing applications, I indicated that both OECA
and DOC are aware of the need for a MARC interface program but that it
is unlikely that this particular interface problem could be resolved
within the present project year. We agreed that such an interface would
have great applicability and should be accommodated in future plans for
Telidon data base expansion.

They felt that a user terminal should be placed within the main Metro
Central Reference Library. I explained the constraints we were under
regarding deployment of decoder units and that for this project year it
might be possible to place one there at some point between January and
March 1980 (as part of a plan for possibly rotating units between different
libraries). On further consideration, they felt that they could not free
up staff training time or space to cover this time-line; we agreed that if
the project enters a second year, then it could be possible to place a unit
in the library as of September 1980 - training sessions with staff to
occur in August of 1980.

Joy Wilson/Writer-Researcher   Distribution: S. Birkenmayer; P. Bowers
                                                        F. Gratzer; J. Syrett;
fyi. Pat Zuist   M. Cioni; J. Thorsteinson;
                                                        D. Watson

In attendance: Birthe Joergensen, Kathryn Elder and 3 Albert Campbell Library staff

                Joy Wilson - OECA

Meeting began with demonstration of RGP 500 input terminal, and then moved into discussion of library content for field trials.

The following course of action was decided upon:

The librarians will produce up to 5 pages of sample announcements, bulletins etc. concerning library activities upcoming in November. At the same time, sample pages (unspecified at this time) reflecting lengthier library reference material will be prepared. All materials to be prepared in time for storage in DOC main computer; material to be used as part of Oct. 27 OLA Telidon demonstration.

Kathryn Elder to maintain close communication with me regarding development of pages, workshop training times for staff etc.

cc. W. Syrett
    M. Cioni

fyi. W. Wright

8 November 1979

SUMMARY RECORD OF A MEETING HELD
WITH REPRESENTATIVES OF THE ATMOSPHERIC
ENVIRONMENT SERVICES ON 1 NOVEMBER AT
2 PM IN ROOM 603, 2080 YONGE ST., TORONTO

Attendance:

M.	MacLeod	AES
A.	Campbell	AES
P.	Pendar	Ontario Weather Service
W.	Lyrnek	Ontario Weather Service
J.	Syrett	OECA
F.	Gratzer	OECA
M.	Cioni	OECA

1. After a demonstration of the user terminal and the RGP 500
    the attention of the meeting focused upon the operational
    aspects of having weather information on the Telidon system.

2. The meeting concluded with agreement upon the following:
    - the terminal will be located at the Ontario weather
      office (administration building, Toronto Airport) and
      contact on an operations level will be maintained
      through Pat Pendar.
    - initial information and display will be kept simple
    - weekend weather update will not be part of the
      initial service
    - graphical information and topical information will
      also be prepared for the interactive mode
    - testing will be done for transmission of information. A
      telecopier image will be transferred into Telidon form

3. The meeting adjourned at 3:20 p.m.

M.L. Cioni
Manager, Telidon Liaison

POST SCRIPT: After the meeting Mr. MacLeod suggested that AES could
find funds to pay the terminal costs and that a movement was underway
at AES to convince the administration of Environment Canada that they
should work out a Telidon software interface.

Distribution List:

P. Bowers
S. Birkenmayer
D. Watson
F. Gratzer
J. Syrett
J. Wilson

11 October 1979

Summary Report - Computers In Education

Background.   The Ministry of Education organized a seminar for their supervisory ranks, designed to acquaint participants with the emerging role of computers in education. (The Minister was to be present, but could not attend.)

Organization.   There were two panel presentations, broken by hands-on explorations of technology, including CAI terminals from OISE, home computers (ATARI), and videodisc (Phillips). I was invited to be on the second panel in order to discuss Telidon in education, but was given such short notice that it was not possible to have a telephone jack installed so that a Telidon terminal could be demonstrated.

Significance. People such as Norman Williams, Chairman of the Council of Regents of C.A.A.T., are focusing the Ministry's attention on the need to formulate policy positions on courses on computer applications/studies, the role of microcomputers in the classroom, and wider repercussions of evolving electronic technology. My own observation was that the Ministry still perceives the educational constituency to be made up of schools, colleges, and universities, and has thus far done little thinking about the implications of migration of educational "courseware" into the home, carried by "home" computers, the VTR, and disk.

Note: Jim McLean advised me that he will be organizing a visitation
        of the Ministry's R and D group to our Telidon project centre.

John Syrett
Project Manager,
Telidon and Education

cc.   P. Bowers
       R. Keast
       L. Miller
       D. Kelly
       S. Birkenmayer

August 23, 1979

<u>Summary Record</u> - Meeting, Ontario Government Representatives

Bryan Tisdall arranged a visit from two reps. of Culture and Recreation.
Dr. Parr was visited by a representative of the premier's office at the
same time. They joined forces at Room 603.

Present:

Alan Gordon, Office of the Ontario premier
Bill Calvert, Min. of Culture and Rec.
David Carmichael, Min. of Culture and Rec.

Jim Parr, Chairman, OECA
Sandra Birkenmayer, Gen. Mgr., Corporate
Bryan Tisdall, Director, Corporate
John Syrett, Mgr. Telidon and Education
Joy Wilson, Project Officer, Telidon and Education

Apparently the Ont. gov't is already proceeding on a plan to increase
public access to gov't information, using computer terminals in the
hands of Information Officers. Data banks serve these officers, who
then respond by telephone to whoever is enquiring. They wish to see
whether Telidon should be incorporated in their long-range plans, permitting
the citizen to access government information directly.

It is clear that the optimal technology for their purposes includes
<u>keyboard access</u> to masses of textual information. They tend therefore
to lean in the direction of free-text accessing such as is represented
by the Info Globe service. They're conscious however that such a service
is not presently linked to TV sets, and that means that the average
citizen would need to buy special display hardware for the purpose,
whereas with Telidon, only the decoder with keypad/board is required.
Our demonstration also illustrated the need for them to consider the
increase in service to the citizen that would be made possible by Telidon's
graphic capabilities, -- e.g. maps, charts, etc.

The indicated outcome of the meeting is further dialogue and joint
exploration of the various technologies. It was suggested that the
DOC would be a logical source of technological information bearing upon
the decisions that will be taken.

Distribution:

P. Bowers
M. Cioni
J. Parr
S. Birkenmayer
B. Tisdall
J. Thorsteinson - DOC
J. Wilson
F. Gratzer

SUMMARY RECORD OF MEETING WITH
ATMOSPHERIC ENVIRONMENT SERVICE
REPRESENTATIVES ON WEDNESDAY,
13 JUNE 1979 AT 3:00 P.M. AT OECA

ATTENDANCE:

Atmospheric Environment Service:

> W. Lawrynuik
> M.A. MacLeod
> J.R. Sandilands

OECA:

> F. Gratzer
> J. Syrett
> J. Wilson

Mr. MacLeod initiated the meeting in response to our letter to
Mr. Sandilands. He was accompanied by Walter Lawrynuik,
representing the Ontario Weather Service, and J.R. Sandilands.

We established that they currently supply information in several
ways, one is by a feed to Broadcast News, who then in effect
sell the information to other users as part of a general news
service. However, they also are supplying their own regional
offices on a computer to computer basis. As I understand it,
they feed the computer at the airport, which can then be
tapped into by mini-computers in other centres. This suggests
that with a mini-computer on site at OECA, we could quite
readily have access to their basic computer data bases, the
difficulty we would encounter presumably being the software
interface at our end of the feed, permitting the messages to
be displayed in Telidon format. They could supply a less
sophisticated service by telex or other means which would
require that we key the bulletins into the teletext system
each day.

We suggested that we try something reasonably simple to begin
with, concentrating during our interactive simulation this
fall upon so-called long-range weather forecasts, which would
be considered reasonably accurate over a three to five day
period, and which would be issued each weekday (not Saturday
or Sunday).

In order to get a full understanding of the nature of the
services and technology that they presently have deployed,
a group of us will go to the Dufferin St. headquarters on
July 9.

We gave a brief demonstration on the VISTA terminal, which
they were already somewhat familiar with. Of greater

interest to them was the RGP 500, and Joy created a map for their consideration, and illustrated how it was possible to use symbols such as the sun or clouds and duplicate them on different locations over an existing map outline, for easy daily updating. They seemed genuinely impressed with the applicability of such graphics to the information which they have to offer.

I thought it was apparent in the subsequent discussion that consideration has already been given to the involvement of the Atmospheric Environment Service in videotex applications in the future, and they are therefore interested in learning a number of things about possible ways that their information can be disseminated. I believe they may aspire to a system which permits them to sell their climatic and weather information on an interactive basis. Nevertheless, they would presumably wish to explore all avenues, and are prepared to supply us with different packages of information in different ways as the means become available. We described for them our interactive simulation for this fall, and our expectation of being in the broadcast mode by January. The present arrangement is that we will be receiving three to five day weather forecast information during the simulation period. I am optimistic that we could select from a much broader range of live information directly from their computer base if we can somehow address the question of a software interface at our end of things.

One other note, -- when we mentioned our expected mini-computer, they indicated that the federal government has placed a purchasing freeze on equipment for the next two months. The question therefore arises whether DOC can supply us out of existing stores, or whether a way around the freeze might be found under our proposed contract with DOC.

P.P.S. — They'd like a user terminal, and I indicated we'd probably supply, but for several months maximum, and on the proviso they compile a general evaluation report for us.

JS:jw

Distribution:

S. Birkenmayer
P. Bowers
M. Cioni
F. Gratzer
D. Watson
J. Wilson

24 October 1979

Attendance: D. Peterson   SED

                J. Syrett   OECA
                J. Wilson
                F. Gratzer
                T. Thorne
                M. Cioni

1. The purpose of the meeting was to exchange information on the
    field trials of OECA and AGT in Calgary. Mr. Peterson, SED,
    drew a diagram of the system that SED had devised for the
    AGT VIDON trial (see Attachment); VIDON, an 8-wire data
    base which will be connected in 120 homes in Calgary, will
    provide Telidon service, fire-monitoring, theft-monitoring
    etc.

2. SED will be creating text only terminals for use in the system
    as well as using transcribing terminals which act as
    "facsimiles" from distant points into the host computer.
    Mr. Peterson stated that INFOMART will be dedicating part of
    its computer to Telidon read only information.

    DATAPAC networking would reduce transmission costs.

3. Mr. Peterson also noted that SED was replicating some hardware/
    software that DOC and Cableshare were in the process of
    developing. This was done so that SED need not rely on the
    time schedules of others causing them delay.

4. Comments were expressed by both SED and OECA on the inadequacy
    of the tree structure and the restriction of the key pad. Mr.
    Peterson said SED would initially supply an alpha-numeric key pad
    with evolution to the keyboard.

5. There was consensus the SED/OECA should remain in close contact,
    providing information to each other on problem areas and new
    found solutions.

6. The meeting adjourned at 5 p.m.

M.L. Cioni   Distribution: J. Wilson   T. Thorne
                                            P. Bowers   S. Birkenmayer
                                            F. Gratzer   J. Thorsteinson
                                            D. Watson
                                            J. Syrett

September 20, 1979

TRIP REPORT

AUSTRALIAN SATELLITE COMMUNICATIONS
WORKSHOP AND SEMINAR, 21-24 AUGUST IN
CANBERRA AND THE IREE IN SYDNEY,
27-31 AUGUST.

Summary:

21-24 August — Demonstrated Telidon at the Australian Satellite Communications
Workshop and Seminar in Canberra

24 August — Gave a talk to approximately 50 Australian educators on
Telidon and OECA

27-30 August — Demonstrated Telidon to participants in the IREE Convention
in Sydney

28 August — Invited by the Australian Department of Post and
Telecommunications, Joint Management Review Board, to
Melbourne to discuss the structure of Canadian government
institutions with regard to broadcasting

30 August — Special meeting convened by Mr. John Stanley, Marketing
Manager, Telecom, to discuss the educational applications
of Telidon

Australian Satellite Communications Workshop, Canberra

In March, the government of Australia had officially invited Canada to
attend a workshop in Canberra to discuss Canada's experience with
satellites and advanced technologies (Telidon and fibre optics).

The workshop opened on the evening of 21 August. There were approximately
275 people attending the three day event which was sponsored by the
Australian Post and Telecommunications (P&T) Department. The workshop
participants consisted of politicians, bureaucrats, scientists, educators,
broadcasters, social service providers and the isolated parents
organization. Although the emphasis of the workshop was on satellite
technology Telidon soon proved to be a major attraction.

The Telidon team, comprised of John Smirle, DOC, Tom Green, technician (CRC)
and myself, demonstrated Telidon from 9 a.m. to 7 p.m. We accessed the
data base in Ottawa using both the INTELSAT satellite (fixed satellite)
and the Hermes. Technically, there were no problems with data transmission.
As a consequence of using satellites for the transmission of Telidon, the
workshop participants seemed to conclude that the two technologies went
together automatically.

The people from the Isolated Parents Organization were dogged in their questions about the educational applications of Telidon. Of particular interest to them were the possibilities of delivery of Telidon data on the broadcast signal (and eventual down-line-loading) and reply by the child on telephone lines. The Flying Doctor Service, which now provides short-wave radio service for the School of the Air (for isolated children), was also keenly interested in Telidon for medical purposes.

At the request of the Australian Minister of Communications, Tony Staley, Telidon demonstrations were given to Senators and members of Parliament after the workshop closed at 5 p.m. The Minister of Health and the Opposition communications critic were most impressed with Telidon.

Throughout the demonstrations John Smirle and I emphasized that in Canada it was felt that both the broadcast and interactive modes were complementary and as such formed a complete Telidon service. We were unaware of the Bell announcement being made in Canada.

Previous arrangements had been made by the Canadian High Commission to have me return to Canberra in the second week to meet with Ministry of Education staff. However, the meeting was re-scheduled for the afternoon of the 23rd at which time I gave a presentation on OECA and Telidon. The questions that followed showed that the audience (approximately 60) were as interested in OECA as in Telidon.

INSTITUTE OF RADIO AND ELECTRONIC ENGINEERS CONVENTION, SYDNEY

The IREE convention, held every two years, is the largest trade show in the southern hemisphere. Under the sponsorship of the Australian P&T department, Telidon and Hermes were demonstrated and technical papers were given by John Smirle and George Davies respectively. Antiope attended the convention and was housed a few blocks away. Joe Roisen, who had been hired by Sofratev to do the demonstration of Antiope, in English, visited the Telidon display frequently. Antiope paled in comparison with Telidon. It was estimated that some 3,000 people saw Telidon throughout the five-day convention.

At the request of Mr. John Stanley, Manager of Marketing, Telecom, I attended a meeting of his colleagues to discuss the educational applications of Telidon. Telecom seemed surprised by some of our concepts such as a complementary broadcast/interactive mode.

AUSTRALIAN POST AND TELECOMMUNICATIONS DEPARTMENT, MELBOURNE

The P&T department requested that someone who was familiar with the Canadian government institutional administrative structure regarding broadcasting meet with their Joint Management Review Team. It was decided that I should attend the meeting in Melbourne. Their purpose was to gather information in this area in order to examine and to evaluate the current Australian structure.

FOLLOW ON:

- Mike Hodson, President, SED is involved in Telidon field trials in western Canada. He adamantly claims that we can be of help to SED. I have invited him to contact us at any time. Not only can we be of help to SED but I think it quite likely that they can help us.

- a special division of the Australian Broadcasting Company is examining multilingual television service and, consequently, is interested in the captioning capability of Telidon. I shall keep them updated on our project.

- various educators in Australia are interested in Telidon and in having others see Telidon. I have arranged with the Information Services of DOC to provide a 16 mm copy of their Telidon presentation to each Canadian consulate office in Australia on a lending basis.

ATTACHMENT: Program for the Australian Satellite Communications Technical Workshop

A copy of the papers given at the Workshop is available in Rm 603.

Maria L. Cioni
Liaison Manager
Telidon and Education

Distribution

P. Bowers
S. Birkenmayer
J. Syrett
J. Wilson
F. Gratzer
F. Trotz

FYI

Dr. Parr
D. Walker

August 15, 1979

Summary Report: Aspen Workshop on Teletext and Viewdata

1. Representation: Over 30 people attended, representing the Aspen
   Institute and other private consultative institutes, U.S. government
   agencies, the telecommunications industry, and various interests in
   Britain, France, and Canada.

2. The Current State of the Art

   The various sessions were informal exchanges of opinion and information.
   The exception was the first session, which was launched with a
   presentation of Telidon by Dr. Douglas Parkhill of the DOC. His
   demonstration provided a context for much of what followed.

   The wide-ranging discussion will presumably be summarized and
   reported out by the Institute. Meanwhile, here are some points
   that struck me:

   2.1   In the U.S., as we had expected, experimentation is scattered
         and on a small scale. Perhaps the most advanced project is
         that of Knight Ridder Broadcasting of Miami, which is developing
         content for a Prestel-based service, but using only 35 terminals

   2.2   The arrival of Telidon on the American scene tends to be
         unsettling, creating anxieties among those entrepreneurs who
         have committed to "first-generation" videotex technology,
         and prompting a wait-and-see approach on the part of others,
         some of whom have already begun to speculate about 3rd-generation
         technology.

   2.3   Although 3rd-generation technology hasn't surfaced yet, there
         are plenty of indications of activity that may intersect with
         the development of the current generation of videotex. The
         SOURCE service (giving telephone access to central data bases
         to those who have home computers) is one instance. "INTELIVISION",
         a home-computer technology marketed by Mattel, is offered with
         entertainment-oriented programming packages that can later be
         expanded to include other services, some of them cable-linked.
         Meanwhile, home-computer buffs are experimenting with terminal
         to terminal communications via the telephone. Thus, before
         Prestel-type systems can be widely deployed, an extensive computer-
         communications "system" may have evolved. The question is posed,
         whether Telidon, with its 3-level communication capability,
         may become the integrating force for all these developments, --
         broadcaster to decoder, data-base to decoder, and decoder to
         decoder.

2.4 The _distinction_ between teletext, viewdata, and do-it-yourself computer-communication can be justified on logical grounds, but operational _separation_ cannot. _Agencies are experimenting with mixes_. One experiment (KSL) provides for a teletext service that can respond to demands expressed via touch-telephones. On another front, Prestel is expanding beyond its retrieval service to offer simple messaging (mediated by the host computer). On yet another front, it seems inevitable that many people having access to ordinary time-sharing computer terminals will become Information Providers to central data-bases.

2.5 There are already so many suppliers of computer-based information needs, that a question is raised _whether a general information service such as videotex can find a profitable market_. Whatever he or she may _say_, will the average citizen devour great quantities of information supplied by videotex when there are already alternative sources of information available in newspapers, libraries, etc.? Paul Berthiaune of the New York Times information service says, categorically, _not_.

2.6 The Berthiaune view prompts the question, _is an information service the primary service of computer-communications technology?_ As the words Teletext and Viewdata float in and out of conversation, the assumption is usually made that we're dealing with public access to data bases. But is that necessarily so? May not people purchase phone-linked terminals mainly for messaging purposes, or for play, rather than for information?

2.7 That leads us to _the future of teletext_. David Webster of the BBC frankly doesn't know whether it has a great future. The technology can be upgraded, more pages can be cycled, but who will pay? Agencies interested in supplying information of considerable social benefit may be the sole support of the service. And will that be sufficient, if sufficient terminals are not in the hands of the citizens? Those terminals again!

3. Economics and Marketing

3.1 The central point of the discussion was, by inference, that _American businessmen can't yet see a dollar to be made_ from teletext and viewdata. This may seem like an oversimplification of a session that examined a host of possibilities for marketing this, that, and the other information service, but all particulars led to that conclusion. It was conceded that there may be public _need_ for "coping" information, but who will pay for a service that is already obtainable from existing sources?

3.2 It was recognized, in passing, that _government_ has by regulation in the past "_made the market_" for UHF, and might again do so for videotex via regulations ensuring that TV sets are fitted for decoder attachments, but the likelihood is not great.

3.3 The most-favoured scenario would appear to be one that features

an evolution of services and technologies to meet a number of specific market demands. It is not ruled out that, as these developments merge with one another, a gigantic network will "jell" incorporating what we now call videotex. At the heart of it all, perhaps, that ubiquitous terminal, presumably fitted with keyboard.

3.4 Electronic "newspaper" publishing is an attractive concept to publishers, but they can't see its practicability via videotex technology.

4. Regulation

4.1 Despite the many reasons that can be advanced for standardization, the predominant American stance would appear to let competing technologies co-exist. Doug Parkhill made the point, however, that there must be standardization of storage in order to avoid the prospect of all existing data bases becoming obsolete as new technologies emerge.

4.2 The issue of the regulation of videotex itself is, in the American context, a matter of monopolization of markets by the A.T. and T. The Consent Decree of 1956 stipulated that as a common carrier, this giant corporation can offer only regulated services that are open to all. It cannot enter an unregulated field such as publishing. The F.C.C., in a recent hearing, opened the door however, to what it called "enhanced services" providing that these services are supplied by an "arms-length" subsidiary. The concept of enhanced services seems to include some degree of processing of data, and therefore might include videotex.

The case of cable is very ambiguous. On the one hand, a cable company is a broadcaster and in a sense, therefore, a "publisher" that has the right to exercise judgment over what should be distributed. In this role, cable could censor videotex content. On the other hand, it does not buy videotex content from suppliers, it affords the independent supplier an avenue of distribution. In this role, it is a common carrier, and might be obligated to give access to any supplier, and to carry whatever the supplier determined.

4.3 The regulation of teletext would appear to be shaped by the same considerations that affect broadcast. Although time is not a scarce commodity in teletext services, as it is in broadcast services, there is a somewhat parallel scarcity of pages. The broadcaster therefore must exercise judgment as to how that scarce commodity is to be used. Presumably that calls for guidelines set by government out of regard for the public interest.

The U.S. government may see other roles it should play, -- guaranteeing that the vertical blanking interval is not gobbled up and therefore made unavailable for teletext; perhaps even subsidizing teletext experimentation. It's obvious that the role of government in Canada is more extensive than it is in the U.S.A.

5. Right of Access; Privacy

5.1 American representatives were mostly concerned with the right of people and corporate citizens to get on to the system (videotex). This was linked to the right of freedom of speech.

It was pointed out however that in neither publishing nor broadcasting was there any right of access to the citizen. A publisher need not publish whatever anyone wants published. Common carriers, on the other hand, must give access to all comers. Which model applies?

Not much was said about the right of the citizen to access information.

5.2 The issue of privacy appears to be a data-base problem, so to speak, rather than a videotex problem per se. That is, computerized records in banking, credit card purchasing, and so on, already exist. Since the interactive form of videotex may involve billing the customer for information, a record of the customer's name, address, etc. plus details about the information sought, would be on record.

Whether computer software can be devised that will safeguard such information, is not entirely clear. Perhaps a service contract signed by both user and provider, specifying the responsibility of the data-base owner not to release information to others will be required.

The DOC's Social Policy Branch is examining these issues. It may be, however, that regulation protecting the rights of the individual will only emerge out of judgments on individual cases, as the technology is applied.

6. Overall Summary

This was a conference that focused a good many issues, and clarified some. It therefore supplied a considerable background that should help the OECA in practical decision-making re the Telidon and Education project.

Largely because the conference's orientation was set by American concerns as indicated above, there was very little examination of specific projects and experiments such as Telidon and Education. Various individuals in the group want to stay abreast of the project as it evolves, however. Its degree of success -- and that of similar projects -- will do more to resolve questions raised at the conference than most of the discussion that took place.

If the conference can be said to have settled anything, in my opinion it is in confirming the notion that terminal-to-terminal communication (by-passing central data bases) will be the market underpinning of all the services we tend to group under the name videotex.

Distribution List: P. Bowers, S. Birkenmayer, D. Watson, J. Wilson, F. Gratzer, M. Cioni

fyi D. Walker

TRIP REPORT

MEETINGS IN NEW YORK CITY
AND WASHINGTON, D.C., 17-19
JULY 1979 ATTENDED BY M.L. CIONI

SUMMARY:

17 July - visit with John Carey, Eileen Connell and Red Burns, Alternate
Media Centre, New York University in New York City

18 July - travelled to Washington. Met with Kathleen Criner, program officer,
National Telecommunications and Information Administration (NTIA)
in Washington, D.C.

19 July - visit with Don Quayle, Vice-President, WETA

ALTERNATE MEDIA CENTRE, N.Y.U.

The Alternate Media Centre proposal for a pilot broadcast teletext service for
public television was discussed in detail at a meeting convened by Mr. Roger
Hough, consultant, in Ottawa on 26 June. (see Appendix A) My meeting with
representatives from the Media Centre brought some interesting information to
light. Their timescale sets June-September 1980 for deployment of decoders in
the Washington, D.C. area. This means that 300 decoders would have to be
available for shipment to Washington by May 1980. Telidon is attractive for
the PBS pilot project because: it is the most technically advanced, DOC
assures that 300 decoders will be available as required, and the price is
right. Regarding this last point, the Centre calculates that in addition to
the purchase of the television set, an allottment of $200/decoder would be
an acceptable price. John Madden has affirmed this price but cautions that
the politics behind such a bargain will require finesse.

Since the 55 decoders allocated by DOC to OECA seem to be straining the former's
resources, I suggested to Carey that for the purposes of the PBS teletext
trial they may wish to consider beginning with a smaller number of decoders
and after one year obtaining the balance, ones that are more technologically
advanced (i.e. with memory). Carey seemed receptive to this idea but
wondered whether or not an initial sample of 100 was large enough to be
impressive. I opined that the first several months would be dedicated
to making the pilot test operational and, in that regard, the number of
decoders in the first year need not be large. A two-phase pilot project
seemed to be more attractive.

Eileen Connell's questions concerning the time needed for developing the
data base and receiving information from providers raised the issue of Telidon's
word editing capacity and the ability to enter material from a remote
location. I explained the present state of the technology adding that software
for improved word editing capability was being devised. I stressed the
importance operationally of being able to enter material into the host computer
from a remote location. Connell and Carey agreed that these requirements
would have to be met for their pilot test too.

Concerning the time frame for the project I attempted to dissuade Carey from
starting so soon; however, I felt that I was on shaky ground here since
I detected subtle political pressures to proceed as planned. For example,
the National Science Foundation may not be as willing to fund a teletext
trial in a year's time, also, there is an element of competition involved and
they do not want to be left behind.

Carey mentioned the name Richard Hooper from Mills and Allen in London as a design and software expert who might be of interest to us. This name surfaced at each of my meetings. I shall write to Mr. Hooper in the near future.

NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION (NTIA)

NTIA, under the leadership of Henry Geller, is an interesting organization having evolved from the White House Office of Telecommunications Policy. I met with Kathleen Criner of the policy/planning division. Unfortunately the Associate Administrator of that division, Bill Lucas, was out of town on the day of my visit. As a sidelight, Lucas in interested in having the government fund private groups to buy and schedule time on satellites. I mentioned the FOCUS organization. There may be an opportunity here for a meeting with Lucas; however, at minimum an information package will be sent to him.

Kathy Criner became increasingly interested in my visit since what I had to say confirmed her opinions. I began with questions concerning the PBS commitment to line 21 closed captioning. Criner said that there was a personal crusade on the part of some PBS employees (e.g. Peter Tenewald, counsel) to line 21. NTIA itself is trying to contain the PBS enthusiasm for line 21 to the extent of being the prime instigator behind the WETA teletext trial. It is NTIA who commissioned the Alternate Media Centre to do the teletext trial proposal as well as a separate study on teletext in general, and it is NTIA who has pressured WETA into being the test broadcaster. Technically, WETA will use line 20 and as much of lines 15, 16, 17 as possible.

Kathy believes that the broadcast mode is complementary with the interactive modes and that, indeed, it is the service which will be used the most. She was quite interested to learn of the educational applications of Telidon (as were Carey and Connell). We discussed this area in great detail. Apparently, they had not thought very much about the educational area. I mentioned that WETA may be interested in using content which we have produced for our demonstration.

As a future project I stated that we may try feeding the Telidon signal into a braille printer. This evoked enthusiastic information about a group called Digital Broadcast Corporation who use the subcarrier frequency to display text messages on a TV screen for handicapped. The service called "The Source" (see Appendix B) uses the Kurtzweiller machine (?) at MIT for the transferring of braille. Also, the Centre for Excellence at Williamsburg, Virginia has a grant from HEW to use the subcarrier frequency for services to the deaf and blind in the Virginia area. Originally, these people have worked with teletype.

The following information from NTIA may be of interest to our project members:
1. NTIA is just finalizing a bibliography on videotex which will be sent to us when it is hot-off-the-press.
2. There is a project called "Greenthumb" underway in Kentucky. Funded by the federal departments of Agriculture, Atmospheric Environment and Commerce, the University of Kentucky is attempting to use a videotex system to bring agriculture and weather information to farmers in the area. The project has not progressed very much since the sort of information required tends to be extremely personalized.

WETA

The vice-president of WETA, Don Quayle, was kind enough to interrupt his vacation so that we might meet. My feeling that WETA is a reluctant participant in this whole scheme was confirmed by Quayle's attitude and questions. He was most interested in hearing from a broadcaster since our concerns are basically his. He felt that the Alternate Media proposal was too vague. My suggestion to start initially with a smaller number of decoders and obtain more advanced ones later was well-received. Also of interest to him was the educational applications which we perceive for Telidon. Quayle will likely visit OECA in late September and will want to learn more about "Telidon and Education".

M.L. Cioni
Telidon Liaison

MLC/jkw

Distribution List:

J. Syrett
J. Wilson
P. Bowers
F. Gratzer
D. Watson
S. Birkenmayer
Dr. Parr
D. Walker

SUMMARY RECORD OF A MEETING
CONVENED BY MR. ROGER HOUGH
IN SALON D, FOUR SEASONS HOTEL,
OTTAWA ON 26 JUNE 1979 AT 9:00 A.M.

Attendance:

R. Hough   - Chairman
D. Phillips   - DOC
G. Collins   - DOC
G. Jull   - DOC
M. Estabrooks   - DOC
N. Leduc   - Bell
H. Woods   - Cableshare
S. Switzer   - Consultant
M. Cioni   - OECA

1. The purpose of the meeting was to discuss the Alternate Media Centre
    proposal to carry out a field trial teletext service on WETA (PBS,
    Washington, D.C.) for the period 1980-83. The Centre hopes to
    submit the proposal to the National Science Foundation for funding
    in the order of $1-1.5 M.

2. I started the questioning by asking how the proposed study would be
    done given the PBS commitment to line 21 closed captioning. Mr.
    Switzer supported my comment asking to know more about the technical
    aspects of the field trial. He commented that the proposal was
    premature since, in his view, the technological developments in the
    coming years would negate the proposed study.

3. A conference call was made to the Alternate Media Centre in New
    York. They were most interested in OECA's experience to date.

4. Mr. Switzer stated that a teletext trial was a waste of time if the
    main interest was to gather information on what sorts of information
    people wanted or needed. He suggested that as an alternative a
    number of micro-computers should be obtained and linked to a central
    computer to simulate teletext delivery. He stressed that a teletext
    system should be independent technically, economically, and
    functionally from broadcasting and, that, once designed, spectrum
    would be found and a new teletext system started.

5. I took the opportunity to tell Mr. Hough that I was surprised to
    see "education" absent from the list of information topics. He
    concurred. I then suggested that material prepared by OECA for
    Telidon might be available for the U.S. demonstration. He was most
    interested and felt that there should be closer contact between OECA
    and the Alternate Media Centre.

6. H. Woods, Cableshare, informed the group that Mallard, MICRO TV, would
    produce a decoder with 8-page memory within a year.

The meeting adjourned at 1:15 p.m.   Maria L. Cioni, Manager
                                            Telidon Liaison

Distribution: S. Birkenmayer; P. Bowers; J. Syrett; D. Watson; J. Wilson
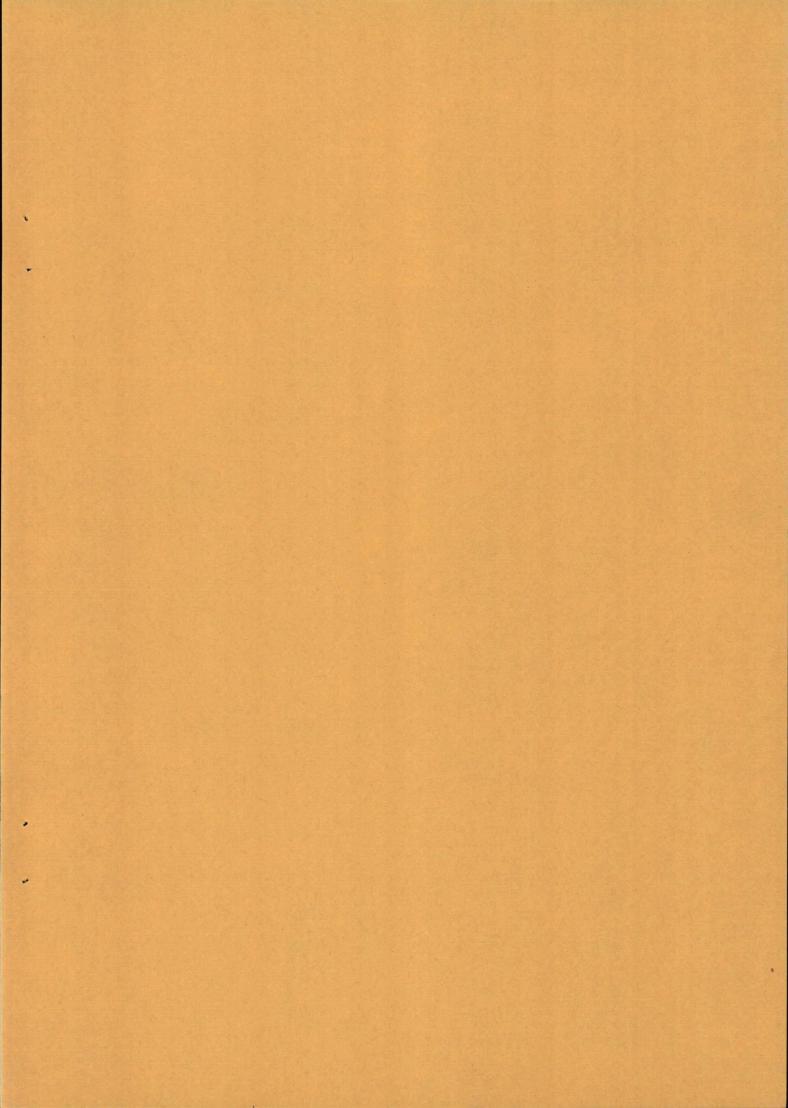
The Ontario
Educational
Communications
Authority

To	Distribution List	
From	Maria Cioni	Date May 14, 1979

Subject   SUMMARY OF A MEETING HELD WITH THE
DEPARTMENT OF COMMUNICATIONS' CO-ORDINATING COMMITTEE
FOR THE AUSTRALIAN SATELLITE COMMUNICATIONS DEMONSTRATION
ON MAY 9, 1979 AT 10:00 a.m. IN ROOM 1210
JOURNAL TOWER NORTH, OTTAWA

1. On May 2-3 a Telidon demonstration was held at CRC for
    representatives of the Australian government: W.E. Beard,
    First Assistant Secretary, Broadcasting Engineering, P & T
    and A.F. Guster, First Assistant Secretary, Satellite Working
    Group, P & T. This was followed by a presentation and discussion
    by OECA representatives P.G. Bowers and M.L. Cioni on the
    educational applications of Telidon. In view of the Australian
    request for this topic to be discussed, the educational
    applications of Telidon seemed well-received by Messrs. Beard
    and Guster.

2. At the May 9th meeting it was announced by the Chairman,
    Mr. R.G. McCullagh, DOC, that the Australians were in the
    process of officially requesting that a Telidon demonstration
    be put on in Melbourne and Sydney separate from the satellite
    presentation in Canberra. The Australians felt that the Telidon
    demonstration might be held earlier since those Australians
    interested in Videotex had been asked to delay any decision
    on the technology until after they had seen the Canadian
    demonstration.

3. Since Telidon is under the ADMR and the satellite mission under
    ADMSP it was deemed necessary to discuss the matter with
    Mr. Parkhill before proceeding.

4. Miss M.L. Cioni offered to explore the possibility of OECA
    doing the editing of the Hermes tele-education/tele-medicine
    experiments. Mr. George Davies, CRC will take an OECA sampler
    tape to Australia when he visits the end of May to ascertain
    what programs the Australians would like to see on
    the satellite demonstration.

5. The meeting adjourned at 1:25 p.m.

M.L. Cioni
Manager
Teldion Liaison

DISTRIBUTION LIST

P. Bowers
S. Birkenmayer
J. Syrett
D. Watson
J. Thorsteinson - DOC Ottawa

Telidon and Education, Document 4

Principles of Agreement between the OECA and Information Providers
participating in the Telidon and Education Field Trial, 1979-80

1. Objective

   The fundamental objective of the Telidon and Education Field Trial
   is to give participants the opportunity to explore the potential
   of Telidon technology for educational applications. (Telidon
   technology includes, for the purposes of the Field Trial, both
   broadcast and phone-link modes.)

2. Voluntary Commitments

   Towards the attainment of the fundamental objective of the Field
   Trial, the OECA and participating Information Providers
   voluntarily undertake to contribute specific resources to the
   enterprise.

3. OECA Contribution

   a) The OECA undertakes to bring to the enterprise a broadcast network
      facility, and, with the aid of resources provided by the federal
      Dept. of Communications, access to available Telidon technology,
      including one or more entry terminals, up to 55 user terminals,
      and one or two host computers. The OECA's Telidon and Education
      project team is available within the limits of its resources to
      play a facilitating role, demonstrating the operation and reach
      of the entry terminal, consulting on the organization of the data
      base, illustrating presentational factors, and so on.

   b) The OECA undertakes, within limits determined by available funding,
      to allocate resources towards the cost of operating user
      terminals.

4. Information Provider Contribution

   Information Providers bring to the enterprise a product of their own
   choosing. This could be a page sequence previously produced and
   perhaps modified somewhat to accord with Telidon technology and
   the organization of the data base; or it could be a sequence produced
   specifically for the field trial.

5. Respective Responsibilities

   a) The entering of page sequences into the data base via the entry
      terminal is the responsibility of the Information Provider,
      with the assistance of OECA's project team. Graphics require
      access to an RGP 500 entry terminal -- for bookings, Janet Webb,
      (416) 484-2930 -- but it may be possible to use existing
      alpha-numeric terminals for remote entry of textual sequences
      into the data base.

b) Formative evaluation of sequences is the concern of each Information Provider, assisted where resources permit by the OECA. Summative evaluation will be a joint venture of the Information Provider and the OECA on some basis to be agreed upon by the two parties.

c) In principle, responsibility for the accuracy of content as supplied is the Information Provider's, and the OECA undertakes not to edit unless expressly authorized to do so by the Information Provider. Where the content is distributed by broadcast means rather than by telephone, the OECA is subject to whatever regulations apply under existing legislation, and may find it necessary to refer the content of a given page back to the Information Provider.

d) In the case of teletext (broadcast mode) the daily selection and display of up to 200 pages drawn from the reserve data base are the responsibility of the OECA, the responsibility to be exercised after initial consultation with Information Providers.

In the case of the interactive mode (phone-linked), it is anticipated that the availability of a large data base will render unnecessary any process of selection.

e) Responsibility for the pattern of deployment of user terminals lies with the OECA, following criteria suggested in the proposal Telidon and Education 3. Consideration will be given to representation of the client group(s) that Information Providers have in mind in relation to their content sequences.

Because of the limited supply, rotation of user terminals among users and Information Providers may be necessary over the life of the field trial. The desirability of Information Providers' having user terminals on site during the period of formative evaluation of content is recognized, subject to availability. Having in mind the limited supply of user terminals, deployment of such terminals on site during the summative evaluation phase of the project will depend upon their accessibility by representatives of various targeted client groups.
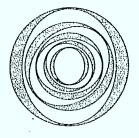
6. Page "Headers"

In order to convey to the user an accurate impression of the derivation of the test service offered by the Field Trial, the "header" information on the top line of each page will consist of the information TVONTARIO   TELIDON FIELD TRIAL, presented unobtrusively. "Header" information on the second line will be given more graphic prominence, and will consist of the name of the Information Provider, and the page number.

Reference: Maria Cioni (416) 484-2931

The Ontario Educational
Communications Authority

P.O. Box 200
Station Q
Toronto, Ontario   M4T 2T1   .

Telephone (416) 484-2600
Telex 06-23547

TO INFORMATION PROVIDERS, TELIDON AND EDUCATION FIELD TRIAL

To The Attention Of:

Telidon user terminals are beginning to arrive and production
arrangements are being consolidated for the preparation and
entering of sequences into the data bank. In short, the OECA
Telidon Field Trial, scheduled to begin broadcasting in January,
is being put in place for preliminary testing and operation.

Attached are two documents. Document 4, "Principles of Agreement,"
is the proposed basis for joint participation in the Field Trial
(OECA/Information Provider) in the fiscal year ending 31 March,
1980. Comments on this Document would be appreciated; however,
if these Principles of Agreement are deemed satisfactory as a
basis for your participation, we request a confirming letter
over the signature of an authorized officer of your institution.

Document 5 is a production form designed to focus and to register
the Information Provider's contribution to the Telidon and
Education data base. It should be filled in by those directly
involved in the design and production of material, and a copy
forwarded to the attention of:

                    Joy Wilson
                    OECA, Box 200
                    Station Q
                    Toronto, Ontario   M4T 2T1

If there are any questions deriving from either of the Documents,
please ring me at (416) 484-2931.

                    Maria L. Cioni
                    Manager, Telidon Liaison

OECA Telidon and Education Field Trial

DOCUMENT 6-1

ATTENTION:

Thank you for indicating your desire to participate in
the Telidon field trial.

The trial is encumbered at the moment by an insufficient
number of terminals from the Department of Communications.
We hope that this problem will soon be settled. In the
meantime a list of potential participants is being compiled
and as soon as terminals become available you will be
contacted with more information.

If there are any questions please ring the Telidon office
at (416) 484-2930.

Maria L. Cioni
Manager, Telidon Liaison

16 January 1980

Preparation for Installation of Telidon Terminals

Dear Telidon User,

We of the Telidon and Education project team are pleased that you have undertaken to participate in the field trial.

The field trial holds promise of worthwhile learning experiences for us all. Because we are working with the early generations of a new technology, the field trial will undoubtedly pose some problems too.

In order to minimize such problems, we offer herewith a check list of things to do in preparation for the installation of a terminal at your site.

1) Select the exact spot where you want the terminal (TV set, decoder, modem) located.

2) In selecting the site, keep in mind these requirements:

   a) nearness to power (hydro) receptacles sufficient to permit plugging in three devices (TV, decoder, modem)
   b) suitability for easy installation of a telephone line linking the modem and decoder
   c) supervisability of the site during use of terminal
   d) security of terminal when not in use (eg. lock on door)
   e) the user circumstance (whether terminal to be used by individuals or groups)
   f) "furniture" you want the terminal to sit on (low table? AV cart?). Keep in mind that the TV set could be 30 x 24 x 24 inches, the decoder 4 x 16 x 18. The modem and phone are compact enough to sit on top of the decoder.

3) Double-check with us the time of delivery of (a) the TV set and decoder and (b) the modem.
   These two are delivered separately. Bell Canada may install the modem before the arrival of the TV and decoder (in which case our representative will connect the terminal up when he brings the remainder), or after the installation of TV/decoder (in which case the Bell rep will connect the terminal up).
   Re (a), your initial contact here will have been Maria Cioni (484-2391). However, specific arrangements and installation will be handled by Gerry Theriault (484-2656).
   Re (b), your initial contact will have been Maria Cioni or Joy Wilson (484-2931), who will have advised you of the deadline date for installation of the modem. However, specific arrangements will be made by a Bell Canada representative, who ordinarily will do the installation on a day prior to the deadline date.

4) Make sure that whoever finally connects up the terminal (modem to TV set/decoder), has enabled you to summon up some images on the screen before he leaves. If the terminal isn't working then and there, call our engineer, Frank Gratzer (484-2900), the project leader John Syrett, or anyone at 484-2931.

See also, Document 8,
How to Get on the System

How to Get on the System

1) For general principles, consult the 2-page NORPAK summary supplied by our project team representative.

2) Power: Make sure all three power cords are plugged in. Then, turn on TV set, and turn on decoder by pressing the square "power" button to the right on the face of the decoder.

3) Dial up: Use the data-set to dial up one of the Ottawa numbers supplied by us.
   Start with the "Talk" button depressed, lift the receiver, and listen for the dial tone. Dial long distance (1-613, then the number) if you're calling from outside the Ottawa calling area. If there's a "busy" signal, hang up and try one of the other numbers.
   When you hear the phone ringing (usually one or two rings only), wait; as soon as you hear a steady high-pitched note, push down the red data button on the left. You should immediately hear another note of lower pitch. Replace the receiver. In a few seconds, the first page should be on your screen.

4) If there's nothing on the screen, the problem could be a minor one of adjusting the decoder, or it could be a long-distance problem originating with transmission from the computer.
   Start checking by pressing the square "reset" button on the face of the decoder. Then press the "up" arrow and the "go" button on the key-pad.
   If there's still nothing on screen, repeat the procedure, but this time observe the effect of pressing the "go" button on the tiny TX and RX bulbs to the left of the reset button. If you are "sending" or transmitting a signal to the computer, the TX bulb should briefly flash red; if the decoder is receiving a signal, the RX bulb should flash red.
   If there's no "transmit", the probability is that the decoder needs attention. If there's no "receive", we may need to call the data base in Ottawa to see if a correction can be made.

5) When the system is operating, it is wise to keep a tab on the time consumed. Outside the Ottawa calling area, long-distance charges apply. Avoid the common fault of letting the terminal stay on even though attention has shifted to general discussion.

6) Phone numbers to the host computer ports:

   The following phone numbers in the Ottawa area code (613) will connect you to the host computer:
   1-613-596-9014
          596-9015
          596-9016
          596-9044
          596-9045
   If you try one number and it is busy, try another. Patience will ensure you a line into the computer.

Telidon Page Sequence Description

Information Provider   _____
Writer/Designer   _____
Contact Person   _____ Phone: _____

Page sequence title   _____
No. of pages (est.)   _____
Intended user groups   _____

The Learning level   To provide information   ☐
                           To build enthusiasm for follow-up activity   ☐
                           To involve the user in thinking process   ☐
                           To teach a skill   ☐
                           Other: _____

                           _____
                           _____

Educational objective   Primary/Junior   ☐   University   ☐
                           Intermediate   ☐   Open/Adult   ☐
                           College   ☐   _____ ☐

Broad subject   General Works   ☐   Natural Science   ☐
   category   Philosophy   ☐   Useful Arts   ☐
                           Religion   ☐   Fine Arts   ☐
                           Sociology   ☐   Literature   ☐
                           Philology   ☐   History   ☐

Specific content   _____
   (describe)   _____
                           _____

Presentation design   Simple list of items   ☐
                           Quiz or self-test   ☐
                           Puzzle game, plus information   ☐
                           Graphic illustration/explanation   ☐
                           Humorous graphics plus information   ☐
                           Other: _____

                           _____
                           _____

Expected evaluation
activities, during or   _____
after development of   _____
sequence   _____

Approx. dates access to
entry terminal required   _____, _____, _____

OECA contact   Maria Cioni   Phone (416) 484-2931
                           Joy Wilson
                           Janet Webb
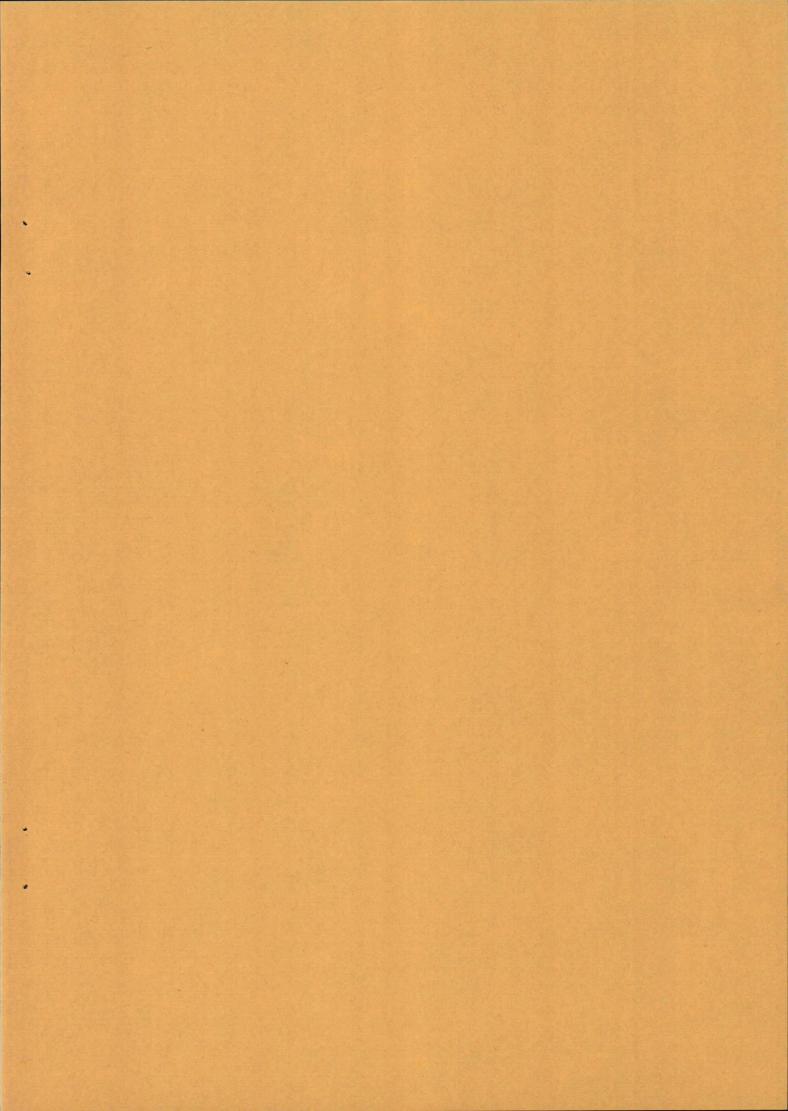
23 October 1979

Routing of pages, and relation to Key-pad operation

1. All numbers of pages in the Telidon and Education data base begin with 4.
    In order to avoid confusion in the data base, all information providers must use only derivatives of a number assigned to them by Joy Wilson.

2. All pages have either (a) "whole number" addresses, or (b) "segmented number" addresses. For example,
    (a) 44
    (b) 44:16

3. Whole numbers (N) run from 0 to 999,999. Pages so numbered are sometimes called index pages.

4. Segmented numbers (N:n) derive from the whole numbers, and run from N:0 to N:999. They are sometimes called document pages.

5. Whole numbers branch or step up by 10 times plus 1 to 9.
    For example,
    44 when branched to 3 becomes 443 (i.e., 440 plus 3)
    443 branched to 2 becomes 4432
    4432 branched to 9 becomes 44329

6. Segmented numbers do not step up as whole numbers do.

7. Branching from any whole number is indicated on a page by offering choices from 1 to 9. The person operating the key-pad must remember to press the chosen number then the "go" button (.).

8. Routing within any sub-set of 999 document pages is indicated simply by colon, number (e.g., :371). The person operating the key-pad must remember to press the colon, then the number, then "go".

9. To move in arithmetic sequence, the instructions on the page need only say "press →". The key-pad operator must remember that this means to press the forward arrow, then the "go" button. This procedure works for both whole numbers and segmented numbers, e.g.
    41 →   41:1 →
    42 →   41:2 →
    43 →   41:3 →
    44 →   41:4 →
    45 etc.   41:5 etc.
    but is of more use for segmented number sequences ("document" pages).

10. To return to an immediately preceding page, the key-pad operator presses the return arrow (←) and "go". Information providers should note, in giving page directions, that the return arrow traces the route just taken regardless of the number of the preceding page.

11. All page addresses should be shown at top right of the page, second line from the top, opposite to the Information Provider's title.

Memorandum

The Ontario
Educational
Communications
Authority

To	Herb Bown		
From	John Syrett/Joy Wilson	22 January 1980	Date
Subject	Impediments in IPS System		

At our Jan. 16 meeting, you remarked that, in anticipation of the design phase of the Mark II IPS system, a list of impediments observed in the operation of Mark I would be welcome.

1. <u>System response time</u>: The cumulative loss of time entailed in the delay between striking of function keys and the read-backs has a considerable bearing on speed of production. On our RGP 500 unit, the intervals tend to go as follows:

Press	Interval
graph	12 seconds
recall	4 "
enter file name	4 "
colour	1 "
green	3 "

    The "recall" sequence is a particular irritation when someone comes in to run through a set of 40 or so pages for familiarization or checking purposes. To get the pages on screen often takes longer than to read the information on them.

2. <u>Text in graphic mode</u>: We've wondered why the software is not configured to permit automatic continuation to sequent lines. As things stand, pressing of the return key relocates the cursor at the beginning of the next line, but the operator must then press "text" (pause) and "select" before beginning to type. Particularly when vertical tables of words or numbers are being typed in, this involves a great many "extra" operations. What we need is an integration of the text (word processing) mode with the graphics mode.

3. <u>File read-back (list)</u>: In the Version 1.0 software we're using, the first level of function choices permits the listing of files, but once the choice of graphic mode is made, the operator cannot check the list except by pressing the RUN button on the micro-processing unit, and waiting for the first-level choices to reappear. On the Prestel unit I operated briefly last March, it was possible to list files very expeditiously.

4. <u>Storage-block read-out</u>: We found that if a very complex page is being produced, the point where no more storage is available is reached without advance warning. We would then receive after-the-fact feedback such as "file truncated". The operator needs to know when the danger point is approaching. Also, it would be helpful if

...2

if the sort of file/storage status that shows up at the end of the listings (level 1) could be summoned for any given page.

In the case of teletext pages, it's especially important to know whether the "size" of page is getting to be too great for the decoder buffer to handle.

5. <u>Auto-analysis</u>: I use this for want of a better term, to indicate the need for the system to describe what's wrong with it, or to somehow give a status reading that results in corrective action. We've been faced with a "warning, text will not be properly displayed" statement, but have never succeeded in finding out what the problem, if any, is. (The text seems to be displaying O.K.). On another occasion, the system declined to execute commands until we pressed the RUN button again. We know that sometimes these unpredictable responses are related to our being in the "Join" status, but in other cases that appears not to be the problem. On those occasions, we'd like the system to describe corrective action somehow.

6. <u>Rotation, Scale-up/down, 'group' re-location</u>: These are 3 quite distinct functions which we understand Bell Northern has already demonstrated. They are doubtless on your list already, but we endorse the view that they are important. Incidentally, I use "group re-location" to mean being able to re-position not just one polygon (or other entity) at a time, but an interconnected set, such as a face made up of several polygons, lines, etc.

7. <u>Colon/Period</u>: The operator must use a period to indicate the on-set of document pages, yet the user instructions on-screen must always refer to the colon. Page addresses tend therefore to be shown 123.67, reflecting the way the file entry instruction must be given, but the user is told "go to page 123:69".

On the key-pad, the period means GO. Cannot more consistency be introduced?

8. <u>Anomalies noted over a period of time</u>:

a. The creation set still displays arcs and polygons on a left-to-right basis in contrast to the user set which displays bottom to top. This difference continues to be a design headache since the writer/ inputter must mentally visualize how a page will really assemble - this adds time and frustration at the production end.

b. The "built-in" anomaly regarding character size O should be corrected. It is not enough to know that the size exists but will not display properly on the creation set. For effective use, this size must be capable of being viewed by the inputter. It is extremely difficult to guess how much space it will require when an overall page layout is being composed. One might as well not have this size as an option.

c. The "built-in" anomaly of the grey scale defaulting into white makes use of this spectrum next to useless. Bell Northern Research has already accomplished the feat of creating pages - using the grey scale and displaying it on the creation display - and this should definitely be a feature in future IPS units.

d. Use of the fill pattern on the status mode has revealed another "glitch". On both the DX and DY grid, when fill #1 is pressed, two pixels on each grid are so close together that they display as a thick line - thus a heavy "cross" appears on the display, throwing the consistency of the visual pattern awry. This effectively stops use of the pattern in those two areas of the screen affected by this fault.
(Using the small grid as a locator: On the DY axis the 2 pixels too close together are in the column of squares that are the 7th from the top. On the DX axis, the 2 pixels too close together appear in the vertical column of squares 15th from the far right side.)

e. There are times when the function buttons, as well as the joystick button, must be pressed at least three or four times before the system will respond.

f. For some unknown reason (possibly heat in the room although this has not been a constant factor) there are times when user instructions (eg. move marker to beginning, enter text etc.) simply do not display at the top of the screen. If the inputter knows the sequence of steps then the unit will respond (i.e. will accept instructions punched in). However, it adds frustration in that it calls on the inputter's memory to complete the graphic and this can cause errors in procedure to occur.

g. The joystick is awkward to use. Great care must be taken, for example, in drawing lines to make sure the line does not "dip" off the vertical or horizontal path. Furthermore, inputters must be warned not to touch the joystick, or its pad, during completion of instructions on the screen, or the command will abort (in severe cases, it will cause the system to crash). Bell Northern Research has replaced the joystick with a numeric directional pad for moving the cursor, combining it with a "touch" pad for drawing which appears to be faster, more accurate, and less prone to crashing than does the present joystick.

h. There have been times when an object modified to a different colour will stay initially in the set colour, not changing until the display function is utilized - believe this is just a case of sluggish response, but it does cause confusion at times for the inputter.

9. File Maintenance Faults: In the list function, the column recording the number of blocks per page is missing.

The "new" function does not appear to function. This may be a function of the discs used, but nevertheless at the present, new discs must be initialized using the RTII system - a slower process.

The "backup" function to copy entire contents of one disc to another works, however the "copy" function - to copy individual pages from one disc to another - does not work. Again, one must enter the RTII system to accomplish this.

10. <u>Grid Problems</u>: Grids really should have numbers across the top and down at least one side to help in layout.

Line 20 is at the moment inaccessible for use, hidden as it is behind the bottom instruction line. Although we do not use it for text or graphics (since these would not be suitable for the user terminal where line 20 "bleeds off" the screen) nevertheless it should be raised above the instruction line (the blue boxes) so that the background colour rectangle can be extended to cover the line. Right now, a black area appears at the bottom of pages displayed on the user terminal because the background colour goes only to the bottom of line 19.

Circulate

To	John and Joy		
From	Tom		Date 30 Jan 80

Subject   <u>NEW SOFTWARE-HARDWARE GLITCHES</u>

1. The top row of rectangles in a small grid will not
fill with a background colour. It also falls short
of reaching the top row by about 2mm no matter how
determined I am to get it to do what I want. However,
the top row will accept a line of text and if you
start a rectangle in the top row it will start the
function but will not finish it until you drop into
the second row of the small grid. Annoying.

2. Text on a coloured background (or for that matter
black) shifts down about 1mm quite often when return
is pressed. Also the cursor does not consistently
land for the next line in the right spot..it's necessary
to reposition each time. Time consuming. Probably a
hardware hassle rather t an software but who knows?

3. While doing a polygon shape at at the bottom of the screen
yesterday the following happened. It drew nicely with the
cursor but would only half fill. A line of scan stayed
in place and electronic noise was observed running up
and down the vertical line of scan. To locate truncation
count in 20.5 rectangles on the bottom row of the small
grid from the right. This requires a reset to get anything
to happen which meant I lost part of a page thatwas
not stored. Likely hardware fault of the 5th floor machine.

4. Today-5th floor machine refused to display old
files of my listings highlights. Went crazy and truncated.

504

Problems encountered in page creation:

A) Text Inputting:

- Typing speed acceptable to system is not great, although a definite improvement over original software supplied.

- Having to program every separate entry for text is a hindrance which slows down input time. Would be helpful if you could go from draw to status to text in order to continue in text mode for as long as you wish (e.g. in draw menu if you set status for typing a character size - it stays in that size until you change it - why not a continuous text/no text status entry).

- Lack of text editing/word processing functions (e.g. character delete, character insert, line delete, line insert etc.) is a problem in efficient production of text pages; this problem is being addressed but its lack at the moment should be kept in mind when discussing current critical problems.

- Even when word processing functions exist (to manipulate lines, characters) the need to change the colour of different text entries, without leaving the text mode to do so, should be examined as a necessity for speeding up text input.

- On the input terminal the character sizes 0 and 1 cannot be displayed, although the unit adjusts the spacing required for this input. This lack of display capability makes the planning/design/page evaluation of such material so difficult that it effectively precludes use of these 2 character sizes ... thus defeating the flexibility of having these options at all. Again, this anomaly is noted in the user manual, but should be corrected as soon as possible.

B) Graphics

- Another anomaly noted in the user manual relates to the inability to see shades of grey on the input terminal. In the draw menu the shades of grey are not illustrated, they are merely indicated by LVL1, LVL2 etc. There is no adequate documentation visually depicting what shade LVL1 etc. are, and choosing one of these shades for display on the unit is pointless since all shades of grey are shown as white. The presence of this system anomaly effectively precludes an inputter from using the grey scale at all.

- The position function in the edit/modify mode shows the inputter the starting point of the item, allowing for precise manipulation/movement of the item from one area to another. This is a very useful aid. However, this starting point identification aid is missing in the copy mode, making it more difficult to precisely locate where a copy will appear. I suggest that this aid be added to the copy function.

- In the polygon mode, inputters should be warned that crossing polygon lines or exceeding 250 vertices will create problems for the computer, resulting in erratic and unwanted spillovers/crashes. This was not identified in the user manual.

- The user terminal has a pause button. In creating a complex (especially animated) page, it would be useful in the display mode to be able to pause or freeze the page filling movement to correct a detail before releasing the picture to continue on its way (nb. in designing such pages, movement and relationships between items cannot always be fully planned/evaluated at the creation stage).

C) Information Storage

- When a page is stored it would help the inputter if a message came back saying "page is stored". A minor detail but in a busy environment, it is possible to be distracted and then inadvertently store the same page twice. This results in a very slow display on the system since duplication occurs.

- The floppy discs in the RGP 500 have a storage capacity of only 6 blocks per page before the PDI buffer overflows and the system refuses more information. As a result, a complex page must be stored under a number of different file names (numbers) and notes made for the DOC to enable them to collapse these multiple pages into a one page display.

D) User Terminal/Inputter Terminal Display Discrepancies

- At present the user terminal fills from bottom to top while the input terminal displays from left to right. This discrepancy creates visual planning and design problems for the inputter.

- Display time on input terminal is not the same rate of speed as it is on the user terminal. This creates a timing problem in evaluating the visual impact between the two systems.

Joy L. Wilson
Writer/Researcher

Memorandum

The Ontario
Educational
Communications
Authority

To	H. Bown, DOC
From	J. Syrett, OECA 7 January 1980 Date
Subject	Modem/Coupler Requirements

Further to the action item on page 2 of the minutes of our
Dec. 12 meeting, here is a description of anticipated OECA
needs:

1. Acoustic Couplers

Given assurance of reliability of performance of acoustic
couplers, we would favour in every case using couplers
instead of hard-wired modems. Reasons for that choice
are evident, -- the installation charge of about $125, the
monthly rental of $104.00 per modem, the need of large
institutions (colleges, universities, school boards) to
relocate terminals within their buildings to serve different
departments, etc., as well as our own requirement to set
up demos outside the OECA site. Even more compelling is
the emotional toll of trying to arrange installations
of modems. Everyone, -- phone company, terminal user, and
the OECA rep, ends up exasperated.

Full-duplex:

We recognize that only the full-duplex CGE coupler has been
field-tested, and that within the present framework of
half-duplex modems accessing the PDP 11/34, the CGE is "odd
man out". We understand that, because the bps rate is 1200
Baud both ways, this coupler would also be incompatible with
a system that uses 202C/150 modems. Accordingly, having
purchased one CGE coupler, one requirement is that we continue
to be able to access one port on STANLEY, and later, GRETA.
This will allow us to give demos outside the OECA building
as need arises.

Half-duplex:

Assuming that the Anderson-Jacobson couplers prove reliable
in the field, and that half-duplex communication with STANLEY
or GRETA remains the norm, OECA projects a requirement of about
10 couplers. This figure is a compromise between an all-coupler
situation (desirable) and the projected cost of purchase of 50
or more couplers (undesirable).

What the 10 would permit us to do is serve most of those user
situations where re-deployment over short spans of time is
called for.

...2

2. <u>Modems</u>

Our basic requirement re modems is early assurance of what specifications will apply. If the present 202ST will be used with GRETA, we can be confident that no further requirements with Bell Canada will be necessary in order to modify existing terminals by substituting new modems. If a different modem is going to be standard, knowing about it early on will enable us to decide whether there is any merit in our purchasing some in order to obviate installation problems arising out of dependence on the phone company's schedule of deliveries.

<u>Multiplexing</u>

Frank Gratzer has proposed an approach to the problem of long-distance charges, using multiplexers. The proposal has been referred to Bill Sawchuk for system implications. Frank draws our attention to the fact that, even if his proposal proves workable on other grounds, there could be a further problem arise in the event that 202C/150 modems are used. He says that available multiplexers may not operate at split speed (1200 forward, 150 reverse). We need to know if this is the case, since it bears on any decision we might make re setting up a multiplexing solution to the long-distance cost problem.

<u>Comment</u>

If the foregoing does not provide adequate information, I'd be glad to respond to further inquiries if I can. I can be reached at (416) 484-2931.

cc. P. Bowers
    M. Cioni
    F. Gratzer

Memorandum

The Ontario
Educational
Communications
Authority

To	Distribution		
From	John Syrett	17 September 1979	Date

Subject   Keypad control "buttons"

Andre Vincent of the CRC has called for input/advice re the
inclusion of additional control buttons on the face of the
Keypad. As a first response, I'm advising him that the specific
functions that come to mind are associated with <u>teletext</u> rather
than interactive videotex. I've forwarded these ideas:

(1)   a control that permits the user to line up a sequence of
      pages in memory, making it possible to avoid a 10-to-20-
      second wait between pages that are called singly.

(2)   a conceal/reveal control such as Norman Green described.
      It is not clear to me whether this is the same control
      that would govern closed captioning.

<u>WHAT OTHER CONTROLS SHOULD BE ON THE KEYPAD?</u> Call us at 2930.

cc.   P. Bowers
      D. Watson
      M. Cioni
      J. Wilson
      F. Gratzer
      L. Gillis

(enc.)

Notes on DOC/Cableshare/OECA meeting, Ottawa, Nov. 22/79

Attendance: DOC John Storey
                  Bob Baser
                  Bill Sawchuk
                  (A. Tennessens? not included)

            Cableshare Herb Woods
                        Steve Allen
                        John McHardy
                        Sammy Ting

            OECA David Watson
                 Joy Wilson

Opening comments given by Herb Woods - felt objectives of the meeting
would be to review the design process (an expanded version of the
Database Control Task Design distributed for comment) and get a freeze
put on it so they could go ahead next week with the final design for
confirmed delivery in February.

Storey warned that insufficient documentation had been received to
guarantee final decisions at this point as he was not happy about how
the end product was actually processed and distributed over the air.
Point made, McHardy and Allen gave overview of the major function of
the operator control unit - which is to report system errors.

Attention was turned to the new draft paper and an explanation of the
main commands:

- command sets - used to group instructions
- defined the "add" and "kill" commands (add=insert, kill=remove)
- defined the "do" and "try" commands
- on "do" the unit executes a command immediately
- on "try" the unit checks if an instruction can be executed (ie. if
  pages are asked for, the system tries first to see if those pages
  exist, then if the pages exist, a "try" will be made to compare the
  size of the pages required with the size of the space available in
  the active cycle - if the pages have room to be inserted the operator
  is told that the transfer command is ready to go; if the pages cannot
  fit into the active cycle the operator is informed that the "try"
  has failed (both response commands asks the operator for verification
  before final execution.)

These commands link operator control to the page scheduler (if "try"
successful & operator gives "yes" verification, then the information
regarding page transfer to the active cycle is placed in the event
queue file - which automatically (if time set) or by operator command
routes pages into the insert mechanism for placement in the active
broadcast cycle.

Based on my initial reading of the documents, I asked for clarification
of the process involved in a failed "try" function. If we wanted x

inserted into the broadcast cycle at a specified time - the request went through "try" and failed - I wanted to know what information the human operator would receive, so a decision could be made on what to do (I envisaged a phone call saying "those pages you wanted in will not fit, the cumulative page size is too great). I therefore asked if the operator received a feedback page list showing the sizes of the pages to be inserted. The answer is NO - the operator is simply informed the try has failed. No page list is available except for those pages already in the active cycle. Steve Allen suggested that if the try fails, the operator should just attempt to fit a smaller group of pages into the insert mechanism (but he is given at this point no information on how much smaller this grouping should be). I pointed out that many of our pages are sequential in their relationships and an arbitrary "cut and chop" attitude could well result in the insertion of only part of a full sequence. However, if the operator was given a page listing of the "try" attempt, then a quick diagnosis has to be ascertained re - at the point where the size of the insert as a whole ran over the active cycle capacity.

This could enable the operator to decide to cut the insert at a logical page - ie. at the end of a sequence of pages - not in the middle - therefore if three sequences (or 3 "magazine" articles) cannot fit, he would only enter two (instead of blindly picking a cutoff point that may well be in the middle of one of them) and we would immediately know: a) what is really going into the active cycle and can make adjustments accordingly to our menu pages (item 3 would be removed as a choice). This "try" page listing is to be added to the specifications for delivery (I did make the point that if this request would slow down delivery we would work around the problem in the shortrun - however, it is apparently a simple matter to adjust).

The point was made at this time that multiple page inserts (versus 1 page at a time) require that the pages be on the same tree level (ie. 1# with its spin-offs, eg. 410 + all 410 derivatives, but not some 410 and some 422's).

Next point raised - the Escape function associated with the direct command "DO". This is used if the operator has started to place pages (via "DO") into the insert mechanism and then realizes that he has loaded the wrong material. He can abort the instructions <u>but</u> some of the pages would likely have already been inserted into <u>the</u> active cycle. Much discussion - "DO" is a rapid transfer of pages as individual items ("TRY" lines up individual pages & presents them as a group for insertion - if this command used an abort will stop all pages - none will enter active cycle - but trade-off is time - it means insertion rate of pages is slowed down considerably; nb with "DO", unit assumes human operator knows what he/she is doing - therefore, much faster - "faster" means 1 page per second). This matter not resolved as David arrived & group broke for lunch - point not raised again. Before breaking Storey requested that since the major commands had been reviewed, he wanted a clear explanation of how 300 pages are transferred from the 5000 page reserve.

This point opened the afternoon session. It immediately became clear that DOC/OECA had one assumption about the relationship between the 5000 to 300 pages and Cableshare had an entirely different assumption.

DOC/OECA assumed that as pages left the 5000 page data base, they would naturally be re-numbered to make up an appropriate "mini-tree" for the

300 page broadcast cycle. The Cableshare design system has <u>no</u>
re-numbering capability - they assumed a direct one-to-one page
transfer (ie. page 45321.999 would be page 45321.999 in the
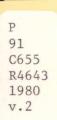broadcast cycle). When it was pointed out
a)   the 5 or 6 levels + 999 document pages available to us in the
     large data base <u>must</u> descend to fit into a 4 level + .99 tree and
     therefore are incompatible and
b)   re-numbering for whatever reason had always been assumed - Cableshare
     responded by saying DOC/OECA should <u>have</u> specified this. After
much heated discussion from Sawchuk and Storey (and myself re lack of
their documentation re system design to us), the following decisions
were made:

Cableshare to try to look at the possibility of designing a "mapping
correspondence file" to enable re-numbering - if it can be done
and to report back (with info on its impact on delivery) to OECA
next Wednesday and to DOC. Both Sawchuk and myself pointed out that
despite this critical need, priority must still be focussed on getting
delivery for a January broadcast field trial. DOC is to call a meeting
with all concerned parties as soon as this information is available.

REPORT ON DEVELOPMENTAL ACTIVITY
UNDERTAKEN TO SUPPORT INTER-AGENCY
EXPLORATION OF TELIDON IN EDUCATION