

SURVEY

SAMPLE WIRELINE SURVEY

Cover Letter

Dear :

As we are sure you know, many computers, computer chips, and software programs used throughout the world were not designed to take into account the date change that will occur in just less than 400 days, when we enter the Year 2000. Even at this late date, experts are uncertain what the likely total effect of this so-called "Millennium Bug" will be. One thing, however, is certain. All sectors of the global economy, including provision of emergency and utility services, food distribution and banking and financial services, to name some, depend upon reliable communications networks. Failure to avert network failures could be calamitous. It is therefore critical that the communications industry take comprehensive and effective action to address the Year 2000 problem.

Clearly, government agencies can not solve the Year 2000 problem. This is a job that each member of the communications community must undertake. Communications companies, equipment manufacturers, and software producers are essential participants in this effort. Nevertheless, serious national interests requiring government attention are at stake. The Federal Communications Commission ("FCC") has been monitoring efforts undertaken by communications companies to address the Year 2000 problem, but we need your help to remain fully informed of the status of your efforts to address these issues. We are today asking the chief executives of the many companies in all segments of the communications industry to respond to the information request attached to this letter.

The assessment incorporates both a questionnaire and a metric that attempts to quantify your efforts to address the Year 2000 problem (a sheet explaining definitions used in both the metric and the questionnaire is attached for your convenience). Please respond to this mandatory information request within 30 days of the date of this letter. Please file a separate response for each of the following businesses under your control: wireline common carrier, wireless common carrier, cable, satellite, and broadcast. The Commission may choose to share with the Network Reliability and Interoperability Council some or all of the information you submit, for the purpose of developing an aggregate assessment of industry preparedness. If you do not wish to have this information shared, please so indicate in your response.

Your information should be filed in the Office of the Secretary and addressed to Marsha J. MacBride, Task Force for Year 2000 Conversion, 1919 M Street, NW, Washington, D.C. 20554. Or, you may instead file the information electronically at the Commission's Year 2000 Web site www.fcc.gov/year2000/. If you have any questions, please call Doug Cooper, at (202) 418-1686, or e-mail at dcooper@fcc.gov.

We realize that you have every incentive to ensure that our communications systems continue to operate without disruption in the Year 2000 and beyond. If, however, you are looking for additional resources for addressing Year 2000, please visit our website at www.fcc.gov/year2000/.

Thank you for your attention to this most important matter.

Sincerely,



FCC NOTICE TO INDIVIDUALS REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 40 hours for providers, 20 hours for manufacturers per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection, please write to the Federal Communications Commission, AMD-PERM, Paperwork Reduction Project (3060-0866), Washington, DC 20554. We will also accept your comments via the Internet if you send them to jboley@fcc.gov. Please do not send completed data to this address.

Remember — you are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060-0866).

THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, P.L. 104-13, OCTOBER 1, 1995, 44 U.S.C. Section 3507.

DEFINITIONS

We partition communications systems into three major subsets as follows:

Network elements — those systems, components, or software that directly affect telecommunications transmission and/or reception (e.g., computer switches, routers, and amplifiers).

Support systems — operations support and administrative maintenance systems (such as maintenance, billing, parts ordering, etc.).

Auxiliary systems — systems or components such as payroll, human resources, security and alarm control systems, environmental control systems, etc.

A frequently cited analytical process for assessing and remedying the Year 2000 problem includes five basic phases. These phases are defined as:

Inventory Phase — This step consists of performing a complete survey of computer, electronic, and telecommunications systems, from the largest mainframe computers to communications computers, routers, and switches; to embedded processors in control systems such as heating, ventilation, and cooling (HVAC) systems; to facsimile (FAX) machines; and to all other telecom equipment.

Assessment Phase — This step attempts to determine whether or not the systems or components identified in the inventory phase will be able to process information in a consistent manner before and after the rollover to Year 2000. Assessment may be as simple as contacting the system's vendor, or as complex as evaluating custom programs.

Remediation Phase — This step involves upgrading, changing, or retiring, the hardware or software in the systems or components identified in the assessment phase, as appropriate.

Unit Testing Phase — Once systems or components are remediated, they must be tested to determine whether all Year 2000 problems have been solved. Typically, individual systems or components are evaluated with a varying range of dates, using formal testing methodologies. Each system or component should operate properly before and after the introduction of test dates (e.g., December 31, 1999, January 1, 2000, February 29, 2000).

Integration and System Testing Phase — Systems or components must be tested together in their operating environments.

Rollout — Some large companies operate large networks of subsystems. These companies may first remediate and test a system in isolation or in a lab. Having finalized a plan, this remediation will then be rolled out to the company's entire system.

These phases are fluid. Having completed one phase, a company may go back and repeat earlier phases. For instance, every action taken should, to the extent possible, be followed by testing. Testing may reveal unforeseen circumstances that may require a return to assessment and remediation.





CONTINGENCY PLANNING DEFINITIONS

In addition to reviewing the major subsets listed on the previous page, contingency planning should examine electric power and suppliers. Following the planning model above, inventory and assessment should be extended to electric power and suppliers. Two additional phases are defined as:

Probability of failure and risk assessment phase — For major subsets of each system, analyze the probability of failure due to Year 2000 date change problems (and for each supplier). For each subset that may fail, what is the risk to business operations of that failure.

Contingency plan phase — For those systems with high probability of failure and high risk to business operations, you will need to develop contingency plans.

FCC INFORMATION REQUEST

The FCC seeks information regarding your organization's preparations for making the transition through the Year 2000 date change. We have designed this questionnaire to be succinct, and we appreciate your quick response. Please feel free to attach any standards, briefing charts, or background material you may have. Please respond by January 15, 1999.

Your response can be filed by completing this form and mailing to the FCC or electronically at <http://www.fcc.gov/year2000/assessment.html>.

COMPANY INFORMATION

1) What is the size of your company (please check only one - fill out a separate hard copy or electronic response for each of the below where the service is a part of your company)?

- Local telephone carriers - How many access lines do you service?
- Long distance carriers - How many customers do you serve?
- Wireless carriers - How many customers do you serve?
- Satellite providers - How many domestic and international uplinks are you responsible for?
- International Wireline - How many minutes of traffic do you deliver?
- International HF Broadcasting - How many frequency hours are you authorized to operate during the current winter season?

2) What states do you service? If you provide a national service, or international service, please so indicate.

3) What is your total Information Technology (IT) budget and your total IT budget devoted to Y2K?

	Total IT Budget	Total IT Budget devoted to Y2K
1997		
1998		
1999		
2000		

ORGANIZATION

4) Who is in charge of your organization's Year 2000 remediation efforts? If appropriate, include responses for your international lines of business specifically. To whom does this person report (please include title)? Please describe how your effort is organized. How many people are involved?

Y2K Effort Leader: _____

Title: _____

Phone: _____ E-mail: _____

Reports to: _____

Title: _____

Number of people involved in Y2K effort: _____

5) Has your organization adopted an industry developed definition for Year 2000 compliance? Yes ____ No ____ If so, please indicate which standard. If appropriate, identify both domestic and international standards.

- British Standard
- Bellcore
- IEEE 2000.1
- GSA (FAR)
- Other specify: _____

6) Have you implemented a formal process for managing your Y2K remediation efforts? If so, please fill out the metric found in Attachment 1. Only those companies whose remediation plans include a rollout phase should fill out the rollout section of the metric.

- Yes, see Attachment 1.
- No

EXTERNAL RELATIONS

7) Do you maintain an up-to-date website to disperse information regarding your Year 2000 remediation efforts? If so, please provide the web address for this site.

- Yes URL: http://_____
- No

8) Are there other carriers, vendors, foreign carriers, and foreign governments with whom you are involved that are not adequately addressing the Year 2000 problem? If appropriate, please identify them and describe the nature of your concerns. Please use additional space if necessary.

8b) If so, how will this impact your operations?

9) Are you working with local, regional, or national organizations, and/or international/intergovernmental organizations to share information about or conduct testing regarding the Year 2000 problem, including those organizations that are concerned with public safety? If appropriate, please indicate the name of the group and a contact person or a website address.

10a) Please characterize the level of cooperation you have experienced, on average, with your vendors (supply chain) and customers.

- Very satisfactory
- Moderately satisfactory
- Unsatisfactory

If unsatisfactory, please explain steps that you have taken to compensate.

10b) Have you begun to work with your supply chain (your suppliers) on Year 2000 problems? If so, what is the status of your interactions? If not, when will you begin this effort?

11) Are you lacking specific information or resources that are slowing you toward addressing the Year 2000 problem? Please check only those that apply.

- Information
- Personnel resources
- Monetary resources

If you checked a box, please explain the nature of the resource problem.

12) Have you begun or do you plan to conduct joint testing with your customers and vendors? If so, what is your time frame for such testing?

CONTINGENCY PLANNING

13a) Have you begun contingency planning, in the event that some of your systems have problems from the Year 2000 transition? If so, please fill out Attachment 2 and please indicate contact information for the person responsible for this effort. If not, when do you plan to begin?

- Yes, see Attachment 2
- No

13b) If so, please describe, in general terms, the approach you have taken to mitigate domestic and foreign risks.

SUPPLEMENTAL

14) Are there any unique problems or circumstances that you have encountered? If so, please describe and indicate whether or not we can make this information available to others.

15) If you have any standard briefing materials, papers or presentations on your Year 2000 efforts, please feel free to attach them.

THANK YOU FOR YOUR ATTENTION TO THIS MATTER.

Respondent's name: _____

Title: _____

Company: _____

Address: _____

Telephone: _____

FAX: _____

E-mail: _____

YEAR 2000 CONTINGENCY PLAN



	Assessment of probability of failure and risk		Preparation of contingency plan	
	% Complete	Est. Comp. Date	% Complete	Est. Comp. Date
Network Elements				
Support Systems				
Auxiliary Systems				
Electric Power				
Suppliers				



	Inventory		Assessment		Remediation		Unit Test	
	% Complete	Est. Comp. Date (1)	% Complete	Est. Comp. Date	% Complete	Est. Comp. Date	% Complete	Est. Comp. Date
Network Elements								
Support Systems								
Auxiliary Systems								

(1) Estimated Completion Date

	Integratrion and Systems Test		Rollout	
	% Complete	Est. Comp. Date	% Complete	Est. Comp. Date
Network Elements				
Support Systems				
Auxiliary Systems				

ATTACHMENTS

PARTIAL LIST OF PROBLEM DATES

It is estimated that there are over twenty date values that could result in malfunctions and for which networks should test. The list below includes some of the more notorious date values.

<i>Potential Event Horizon (Failure) Date</i>	<i>Comments</i>
Jan 1, 1999	Two digit year values may be represented as "99," a value that may signify something other than the year 1999. For instance, in some databases "99" or "9999" was used to signify end of data set or to indicate that there was no value available for that date field.
Aug 21/22, 1999 (midnight)	Global positioning systems: GPS system time, which counts weeks, started counting on midnight 5/6 January 1980. On midnight, August 21/22, 1999, the GPS week will rollover from week 1023 to week 0000. This could be interpreted as an invalid date in some receivers.
Sep 9, 1999	Potential date value of "9999." As with Jan 1, 1999, this date value has the potential to signify something other than the year 1999. Also, April 10, 1999, is the 99th day of 1999.
Dec 31, 1999	Potential date value of "99." In some systems this date was used to signify "never expires."
Jan 1, 2000	First occurrence of a day in the year "00." This day may be confused with Jan 1, 1900, resulting in improper analysis of the date values. It is important to note that while Jan 1, 1900 was a weekday, Jan 1, 2000 is a weekend. January 3 is the first working day of the year 2000.
Feb 29, 2000	The year 2000 is a leap year; the year 1900 was not.
Year 2038	The date value in UNIX and Linux, two popular network operating systems, in a 32 bit system, reaches its largest positive value, resulting in the risk of malfunction.





USEFUL Y2K COMMUNICATIONS WEBSITES

GENERAL

- Federal Communications Commissionwww.fcc.gov/year2000/
- National Association of Regulatory
Utility Commissionerswww.naruc.org/Y2K/y2klinks.htm
- President's Council on Year 2000
conversionwww.y2k.gov
- Small Business Administration.....www.sba.gov/y2k/
- United States Coast Guard on GPSwww.navcen.uscg.mil/gps/geninfo/y2k/

TELECOMMUNICATIONS

- Alliance for Telecommunications
Industry Solutions.....www.atis.org
- Cellular Telecommunications
Industry Association.....www.wow-com.com/techops/y2k/y2k_index.cfm
- General Services Administration's
Y2K Telecommunications Web Sitey2k.fts.gsa.gov
- International Telecommunication Unionwww.itu.int/y2k/
- National Telephone
Cooperative Association.....www.ntca.org/bus_tech/y2k/index.html
- Network Reliability and
Interoperability Council.....www.nric.org
- Oregon Telecommunications Association.....www.ccwebster.net/ota-y2k/
- Organization for the Promotion
and Advancement of Small
Telecommunications Companiessdsweb.sds.rhtelco.com/y2k/
- Personal Communications
Industry Association.....www.pcia.com/advocacy/index1.htm
- Rural Utility Servicewww.usda.gov/rus/y2k/index.htm
- Telco Year 2000 Forum.....telcoyear2000.org
- Telecommunications Industry Associationwww.tiaonline.org/y2k/
- United States Telephone Associationwww.usta.org/y2kwebpg.html

EMERGENCY SERVICES

- Association of Public Safety
Communications Officials.....www.apointl.org/Y2K/
- Federal Emergency Management Agencywww.fema.gov/y2k/
- Society of Broadcast Engineerswww.sbe.org/eas/eas_2000.html

CABLE & MASS MEDIA

- Cablelabswww.cablelabs.com/PR/Y2K_rel.html
- National Association of Broadcasterswww.nab.org/Year2000/
- National Cable Television Associationwww.ncta.com/y2k.html

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ANALYSIS OF RESPONSES BY SMALL CARRIERS WITHOUT FORMAL REMEDIATION PLANS

Question 11 – This question required carriers to inventory the resources that they have available to address Year 2000 issues. The results are shown in the table below. The high response for “information” indicates that medium/small carriers generally believe that they lack adequate information on how to address Year 2000 issues. Responses to this question are consistent with our prior finding that the medium/small-sized carriers lag behind the large carriers in their remediation activities. The high response rate for “information” also is indicative of the complexity of addressing all of the problems that will be presented. While the responses by carriers with and without plans to this question were similar, their added comments on the question provided additional insight on the differences between the two groups. Carriers with plans generally were concerned over missing some details of remediation. Carriers without plans, on the other hand, seemed to be less sure about what information they needed. This leads us to conclude that carriers without plans may be significantly further behind in their remediation efforts than carriers with plans.

<i>Question 11</i>	<i>With Plans</i>	<i>Without Plans</i>
Are you lacking specific information or resources that are slowing you toward addressing the Year 2000 problem? (Information, personnel resources, monetary resources) Please explain the nature of the resource problem.	<ol style="list-style-type: none"> 1. Information 2. People 3. Money 	<ol style="list-style-type: none"> 1. Information 2. People 3. Money



Question 5 – This question asked carriers to identify the Year 2000 definition that they have adopted, if any. A Year 2000 definition is important to identify where a carrier needs to remediate. We believe that a carrier reporting that it has adopted a Year 2000 definition indicates that the carrier has conducted the necessary research into the alternative definitions and their implications. As can be seen from the response rates shown in the below table, a significantly larger number of the carriers with formal planning processes had adopted a Year 2000 definition than those that did not have a formal planning process. Among those responding in the affirmative, the most commonly reported standard is Bellcore’s, followed by switch manufacturer standards.

<i>Question 5</i>	<i>With Plans</i>	<i>Without Plans</i>
Has your organization adopted an industry-developed definition for Year 2000 compliance? If so, indicate which standard.	Yes - 46 percent	Yes - 17 percent

Question 10 – This question probed the relationship between carriers, vendors, and customers. The second part asked if they had begun working with their vendors. In evaluating the carriers’ responses we note that nearly all carriers, irrespective of whether or not they reported plans, indicated that their relationship with vendors and customers was “very satisfactory” or “moderately satisfactory.” This indicates that medium/small carriers generally maintain good relations with their suppliers and customers. We find this outcome encouraging because vendors are a primary source of information and guidance on remediation. Furthermore, a cooperative relationship with customers suggests that these carriers are sensitive to their customers’ needs and presumably would not fail to take the actions necessary to reduce the risk of service disruptions.

<i>Question 10a</i>	<i>With Plans</i>	<i>Without Plans</i>
Characterize the level of cooperation with your vendors and customers.		
Very Satisfactory	53 percent	60 percent
Moderately Satisfactory	46 percent	40 percent
Unsatisfactory	1 percent	

<i>Question 10b</i>	<i>With Plans</i>	<i>Without Plans</i>
Are you working with your suppliers?	Yes – 92 percent	Yes – 76 percent



The response to the second part of Question 10 — whether carriers are working with their suppliers — measures a carrier's depth of involvement with its vendors in resolving its Year 2000 problems. Note that a much larger proportion of carriers with formal planning processes indicated that they were working with suppliers than did those without a formal process or contingency plan. We believe that the difference in response rates for the two groups is material and indicative of a difference between carriers with and without formal plans. When taken together, the responses to the two parts of the question lead us to conclude that a good carrier/vendor relationship may be insufficient; a carrier must proactively work with its vendors to solve its Year 2000 problems. Again, information is critical and carriers that actively work with their vendors will have more information than those that are not working closely with their vendors.

We believe that the responses to the questions discussed above indicate that the medium/small carriers without formal planning processes may be behind the carriers with formal planning processes in their Year 2000 preparation. Without more specific information, it is very difficult to determine whether these carriers will be ready on January 1, 2000 or what additional aid or information they require. We are encouraged that our December survey has caused several of these carriers to examine their Year 2000 efforts and to formalize their planning activities.

NCTA LETTER

November 16, 1998

Ms. Marsha MacBride
Executive Director
FCC Y2K Task Force

Dear Ms. MacBride:

Thank you again for the opportunity to meet with you on October 29, 1998 to discuss "Year 2000" issues. The following is a brief summary of those discussions.

BACKGROUND

NCTA and Cable Television Laboratories, Inc. (CableLabs) have been building Year 2000 (Y2K) awareness within the cable industry since late 1997.

- CableLabs created a Year 2000 (Y2K) Working Group in November of 1997 to share information and best practices regarding Y2K issues. The principle objective of the information exchanged is the focus on uninterrupted service delivery and customer care.
- In May of this year, NCTA provided to its member companies information on how they can be proactive and prepare for the next millennium. Because NCTA represents cable operators, cable programmers and cable industry equipment suppliers, we can be most effective in helping our member companies transition smoothly through the Year 2000 by actively facilitating, as well as participating, in Year 2000 awareness building activities throughout the cable industry.
- NCTA distributed a letter to its Associate members (cable industry vendors and manufacturers) requesting that they make available on their websites information about their companies products and services with respect to Year 2000.
- CableLabs hosted a Year 2000 Vendor Symposium. This conference was open to all cable operators, regardless of their membership status in CableLabs. The symposium is an important part of CableLabs' overall Y2K effort on behalf of the industry. Selected cable industry vendors, including representatives from addressable set-top box manufacturers, billing systems and headend components, spent two days presenting their plans for becoming Year 2000 compliant. In addition to the formal presentations, the vendors discussed their testing and certification plans.
- NCTA's Office of Small System Operators distributed a memorandum to independent/small system operators providing resources on Year 2000 readiness. Information in this memorandum included useful websites and related material; CableLabs' initiatives, and upcoming industry sessions devoted to discussing Year 2000 issues.

NCTA and CableLabs are working together to jointly address Year 2000 issues, and we want to assure you that we will continue our collaboration to help make sure that this "millennium transition" occurs smoothly without service interruptions.

EAS AND RELATED EQUIPMENT

We feel that it is especially critical to address concerns raised regarding Emergency Alert Systems (EAS) and broadcast television services, as well as cable-modem and telephony services being deployed by the cable industry.

As you know, the Commission's rules regarding EAS compliance by the cable industry stipulate that cable systems serving 10,000 subscribers or more must have EAS equipment installed and operational by December 31, 1998. Remaining cable systems must have equipment installed and operational by October 1, 2002. Based





on our understanding, all EAS equipment currently available to cable system operators to meet these schedules is Year 2000 compliant.

The cable industry currently delivers analog broadcast television services. So far as we are aware, no cable systems scramble or otherwise process these channels using equipment that would raise Y2K considerations. We remain highly confident that the distribution of these channels would not be adversely effected.

We also recognize that a growing number of consumers utilize cable television for high-speed data connections and telephone service. Fortunately, the equipment that we employ to provide these services is relatively new, and we have been assured by the relevant manufacturers that both the residential and headend equipment devices are free from Y2K implications.

However, what is less clear to us is the status of customer-owned consumer electronics devices, such as VCRs and personal computers. In addition, customer-owned consumer electronics such as VCRs and personal computers may have Y2K problems that in effect, cause service interruptions in individual consumer homes. While these potential problems are out of our control, our industry will work proactively to educate our customers as information becomes available.

CABLE SYSTEM EQUIPMENT

We have created sub-categories of equipment to assist in the evaluation of potential exposure. The following paragraphs summarize potential problems by equipment location and function.

Source Feeds/Reception Devices

These are devices used to introduce source content to the headend. In general, cable television signals originate from one of three sources: broadcast, satellite and local origination. We have previously noted broadcast origination. Some cable systems use automated equipment to switch among sources to feed a single cable channel. We sometimes call this equipment non-duplication switchers, although they also serve other purposes. Many of these switches are old and are not Y2K compliant and, therefore, will need to be replaced. Suitable functional equivalents are commonly available from manufacturers at a modest capital investment.

The second source of cable television signals is satellites. We have been informed by the satellite program providers that the satellites themselves, along with their ground-based control facilities, will not experience Y2K software problems. However, the video playback equipment which sends these services to the satellite are, in most cases, highly automated. Some of these automation systems are outdated, and the software that controls them will need to be fixed. Once again, we are confident that these programmers have identified the problems and have directed timely fixes for these systems. The programmers have been participants in the CableLabs Y2K program and are keenly aware of the need to provide uninterrupted uplinking of their respective services.

The final source for cable programming falls into what we define as local origination. This category includes cable-originated programming (e.g., city council meetings), access programming mandated by franchise authorities, and commercial insertions into satellite programs.

Local origination and access pose a low risk of Y2K problems. Few of these systems are automated, either in production or playback and, thus, do not rely on calendar

dates. Commercial insertion systems, on the other hand, are highly automated and fairly pervasive. Many of these systems are not Y2K compliant, and this is further complicated by the fact that many of the original vendors are no longer in business. This is another example of systems that will have to be reviewed before the millennium. As with other headend switching equipment, though, functional equivalents are available today at a reasonable cost.

Signal Processors

Most television sources that do not originate within the cable system itself pass through some sort of signal processing equipment. For broadcast services, this equipment is usually used simply to change frequencies or manage signal levels. The equipment used to accomplish these tasks is, without exception, not dependent on the date or time. In some instances, these process signals are passed through some form of switching device, as mentioned above. These devices are largely dependent on the time and date, and many of these are old and susceptible to Y2K problems. Although some of the newer equipment can be upgraded to be Y2K compliant, much cannot, either because it is not cost effective or the original manufacturer is no longer in business. These will need to be replaced. Functional equivalents are available at a modest cost.

A similar situation exists for basic services received by satellite. Time and date are not issues, even for the newest digital receivers. As with broadcast services, it is not unusual for these channels to pass through switching devices. In fact, the switches themselves are the same in both cases, and therefore, the need for upgrade or replacement is the same.

However, if the satellite service is one that we call a premium service, such as HBO or Showtime, the signal also passes through a scrambling device before modulation onto the cable system. Although there are some existing non-addressable scrambling systems in use today (none of these have Y2K problems), most are addressable and are covered below.

Commercial Insertion/Switching Devices

In addition to the switching and routing devices explained above, many satellite services have local commercials inserted at the local level. The number of channels with which such insertion equipment is used varies from system to system; some cable operators do not insert commercials at all, while many insert commercials into from four to eight of the most-viewed channels. A few cable systems insert commercials into 16 or more services simultaneously.

Insertion equipment is problematical for the cable industry. Much of it is older analog equipment, and many of the original manufacturers of this equipment are no longer in business or otherwise no longer directly support the systems. The majority of these systems will need substantial upgrades or outright replacement with Y2K-compliant equipment.





Addressable Set-Top Controllers

Desktop and rack mounted computers send program and pay-per-view authorization commands to set-top converters in customers homes. An early part of the cable industry's Y2K assessment process revealed that many of our addressable boxes are aware of the time and date; however, they do not have internal clocks. Instead, they are told of the time and date from a device called an addressable controller, normally located at the cable headend or business office.

We have been assured by the manufacturers that no set-top box will need to be replaced or updated due to Y2K.

The first addressable controllers consisted of mini-computers (HP-1000, IBM Series 1, DEC PDP-11, etc) running proprietary operating systems and custom software. These devices often relied on special hardware extensions to manage the addressable boxes. Modern systems now run on standard high-end PCs under Unix or Windows NT and have application software written in common high-level languages. All current controllers are Y2K compliant or can easily have their software upgraded to a Y2K compliant version. Fortunately, these systems are fully backward-compatible with previous addressable boxes and can therefore be used with any vintage of set-top device. While a physical replacement of the old hardware platforms is a capital expense, the conversion is straightforward. Perhaps of equal benefit, the upgrade serves the interest of the vendor in the sense that their support responsibility becomes more effective if all of their customers are using the same hardware/software version. For this reason, many, if not most, of the addressable vendors are providing the software upgrade without any cost beyond the hardware upgrade. Again, since these new hardware platforms use standard personal computers, these costs are modest.

Customer Care Systems

Customer Care is the category for devices used to provide billing and account maintenance functions, as well as scheduling service installation, disconnection, and service repair calls.

As a result of discussions with leading manufacturers of these systems, we remain highly confident that Y2K compliant upgrades for billing and appointment scheduling application software, as well as for their associated hardware and operating systems will be available. In addition, these manufacturers have indicated that adequate resources will be in place to install and test these changes for the cable system in time to avert any service disruptions to our customer.

These Customer Care systems also interface with Automated Response Unit (ARU) systems for receiving service orders, as well as to set-top addressable controllers for channel authorizations and television schedule downloads. We do not anticipate that the Y2K upgrades to Customer Care systems will affect the performance of these interfaces; however, we feel that interoperability testing with both the ARU manufacturers and the addressable set-top controller manufacturers is appropriate.

Plant Devices

For the most part, there is little automated equipment in the cable distribution system itself. Signal amplifiers are not equipped with processing devices that would be aware of the time or date.

In some systems, amplifiers have been equipped with telemetry devices that send a 'status report' back to the cable system for monitoring and troubleshooting purposes. In these systems, the intelligence is located at the monitoring end. These generally run on PCs with proprietary application software, but common operating systems. Most of these systems simply generate reports about the condition of the system. Some, however, actually automate all or part of a restoration plan. Even in those systems, the cable distribution plant would continue to operate properly and there would be no disruption to our customers if the monitoring systems were to fail.

Test Equipment

Test equipment is one of the areas of lowest risk. Along with the distribution plant itself, little of the critical test equipment is automated. While some utilize time and/or date functionality, they do so primarily to log test results or schedule periodic tests. We are not aware of any cases where the failure of test equipment would result in a service interruption to our customer.

In a related area, however, there is a commonality between test equipment and the monitoring equipment described in the Plant section above. Some cable systems use a combination of monitoring and test equipment to foreshorten the time it takes to locate the source of a naturally-occurring (i.e., not Y2K-related) outage. For example, one of the primary functions of a telemetry system is to detect and report the impending failure of an amplifier or power supply. Other components of status monitoring might help locate the exact point in a system where the signal is disrupted, perhaps by an automobile accident with a utility pole, or a street construction crew that cuts a fiber feed. The outages that result from such accidents or failures would then be extended by the extra time that it would take to locate the problem manually. Realistically, such failures are rare and not a major cause of system failure.

Institutional Networks

Institutional Networks (I-Nets) are communication networks installed and usually maintained by the cable operator for the benefit of the local community or franchise authority. In reality, most of these networks are really just two-way cable systems where the end users provide and maintain their own terminating equipment. In these cases, then, the cable operator's only responsibility is maintaining the cable and amplifiers. Few of these systems have cable-provided programming, services, or equipment that would have any Y2K considerations.

For these reasons, CableLabs' effort to date has not focused on I-Nets. It may be significant to note that none of the Working Group members or vendors has provided any anecdotal evidence that there might be Y2K issues associated with I-Nets. I-Nets will, however, be a subject of future CableLabs Working Group meetings.





Other Equipment

There are a large number of “external” systems that could affect a cable system’s normal operation. Examples of these include, but certainly are not limited to, package and freight delivery systems, HVAC devices, elevators, security alarms, and many others. As with any other communications media, failure of any combination of these will cause inconvenience and perhaps discomfort to system employees, but they are not expected to disrupt service to our customers.

NEXT STEPS

Addressable Set-Top Controllers, ARUs, and Customer Care Systems play a key role in delivering cable television services. Therefore, NCTA and CableLabs intend jointly to fund a series of interoperability tests to verify their Year 2000 interoperability performance. We intend to conclude these tests this calendar year, at which time results would be made available to the industry. In addition, the funding would include the development of a generic contingency plan that would also be made available to the industry.

In addition to the testing activity, a number of additional activities are being undertaken, including:

- Presentation of Year 2000 issues and information at industry trade shows, forums and conferences, including the NCTA State Leadership Conference, the Western Cable show, the Texas Cable show, and Cable 99. We will also continue strongly to encourage the smaller state and regional shows to include Year 2000 sessions on their agendas.
- Additions to the NCTA Year 2000 website including: a generic Year 2000 test plan specific to the cable industry; information related to the Year 2000 Information and Readiness Disclosure Act; and additional links and updates to the “Coming Up” section.
- Distribution of a letter to NCTA members addressing the recent Year 2000 Information and Readiness Disclosure Act.
- Continuation of the active role of CableLabs’ Y2K Working Group to share information about Y2K fixes and testing.
- Formulation and distribution of customer education materials that can be used to explain to our customers what we are doing and how to contact us in case there are any problems.

In conclusion, our goal is to take every possible step to preserve the delivery of services, to send out correct bills, to process payments correctly, and to schedule and complete any trouble calls that might arise. While it is our sincere hope that we will not have any problems arise, we recognize the importance of preparing contingency plans.

I hope this information has been helpful. We appreciate your leadership and look forward to working with you to make sure that the Year 2000 occurs smoothly without service disruptions. Should you have any questions or seek additional information, please contact me at 202.775.3637 or electronic mail at ascott@ncta.com.

Sincerely,
Andy Scott
Director of Engineering

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