1997-1998 REPORT OF

THE JOINT COMMISSION ON TECHNOLOGY AND SCIENCE

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

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to
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Richmond, Virginia
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I. COMMISSION ORIGIN AND BACKGROUND

The Joint Commission on Technology and Science (JCOTS) was created by the 1997 Virginia General Assembly through House Bill 2138. JCOTS is a permanent legislative commission charged to generally study all aspects of technology and science and to promote the development of technology and science in the Commonwealth of Virginia through sound public policies. (See Chapter 11 (§30-85 et seq.) of Title 30 of the Code of Virginia.) JCOTS consists of nine legislators from the Virginia General Assembly (five Delegates and four Senators).

At its first meeting on July 1, 1997, JCOTS adopted its 1997-1998 workplan. (See Appendix 1.) The workplan called for in-depth study of six issues:

- Federal Telecommunications Act of 1996;
- Joint Legislative Audit and Review Commission's study of Virginia's data processing and information technology services;
- Joint Legislative Audit and Review Commission's study of Year 2000 compatibility;
- Council on Information Management's implementation of digital signatures;
- Civil and criminal laws; and
- Blueprint for Technology-Based Economic Growth.

To assist its study, JCOTS established six advisory committees comprised of people with expertise in the issue under consideration by each advisory committee. JCOTS members served as chair or co-chair of each advisory committee. Over 80 people participated in JCOTS' work through advisory committees. (See Appendix 6.) During the period from July 1997 to March 1998, JCOTS met as a full commission seven times; advisory committees held an additional nine meetings. Each advisory committee reported to JCOTS on January 5, 1998. With slight modifications, JCOTS adopted each advisory committee report. Based on the reports, JCOTS made its findings and recommendations and developed legislative proposals for the 1998 Session of the General Assembly. JCOTS proposed ten bills and eight joint resolutions. (See Appendix 2.)

II. ADVISORY COMMITTEE REPORTS

A. ADVISORY COMMITTEE ONE (FEDERAL TELECOMMUNICATIONS ACT) DELEGATES WILLIAM W. BENNETT, JR., AND GEORGE E. LOVELACE, CO-CHAIRS

Charge: To study the universal service fund provisions of the Federal Telecommunications Act of 1996 (FTA) and monitor the development of the Act's implementation at the federal, state, and local levels.

1. Summary

Advisory Committee One's work began in 1996 through the work of the House Joint Resolution (HJR) 195 study committee, JCOTS' predecessor. House Document No. 81 (1997) contains a detailed section on the FTA and Virginia's existing public sector telecommunications networks. The report also distinguishes between the terms "universal service" and "universal access." Since the initial enactment of federal telecommunications legislation in 1934, "universal service" has been a term of art used to describe the national goal of affordably supplying basic telephone service to any person who wants it. The report defines "universal access" to mean "making the information highway accessible to all citizens of the Commonwealth for no more than the cost of a local phone call." The HJR 195 subcommittee adopted the long-term public policy vision embraced by "universal access."

The FTA's universal service fund provisions were also a major focus of HJR 195's work. The $2.25 billion fund was created by Congress in the FTA to provide discounts between 20 and 90 percent for eligible telecommunications services to schools and libraries. Discounts are based on the percentage of students within a school who reside in a household within 185 percent of the poverty level (and thus are eligible for free or reduced school lunches) and whether the school is located in an urban or rural area. One of the main purposes of the fund is to open up competition in the local exchange market between telephone, cable, and other communications companies. With the HJR 195 subcommittee's recommendation, the 1997 General Assembly passed HJR 635, encouraging the State Corporation Commission (SCC) to continue its efforts to open up competition among telecommunications carriers.

The SCC's report, published as House Document No.15 (1998), recommends that the SCC: (1) continue its long distance and local competition initiatives (begun as early as 1983); (2) continue to monitor universal service proceedings at the Federal Communications Commission (FCC), including pending federal court cases, and take action as appropriate; (3) allow the universal service fund to operate for at least two years before assessing the need for additional state funding; and (4) advise the Virginia General Assembly should the need for legislation arise in the future (none was requested for the 1998 Session). The report includes the SCC's order of June 30, 1997, adopting the discounts for intrastate telecommunications services established by the FCC. Adoption of these rates is a prerequisite to a state's eligibility for discounts funded by the universal service fund. The SCC was one of the first public utility commissions in the nation to do so.

Also with the HJR 195 subcommittee's recommendation, the 1997 General Assembly passed HJR 444, requesting the Library of Virginia to develop a strategic information technology plan for the Commonwealth's public library system. HJR 444 requires a final report in 1999; however, the Library of Virginia's preliminary findings indicated that the ability of Virginia's public libraries to provide access to the information highway for Virginia's citizens remains extremely limited. In 1996, the Library of Virginia reported to the HJR 195 subcommittee that there were only 351 computers in Virginia's public libraries used for Internet access. A 1997 update to the survey indicated that while the number of localities offering the service has increased, the number of public-access computers decreased to 348 (one computer per 19,153 Virginians). The decline was attributed to a number of computers in the Norfolk library system—initially put in service through a generous private donation—being withdrawn from service for mechanical reasons.

Based on preliminary scenarios, the Library estimated that a $37 million commitment of state and local funds in the 1998-2000 biennium would be required to provide Virginia's citizens "universal access" to the information highway through the public library system. The overall system, divided by the Virginia Library Association into six regions, consists of 90 separate public library systems and over 300 buildings. To implement universal access, the report recommended that (1) all Virginia public libraries and their bibliographic databases should be linked electronically; (2) the information highway should be accessible to all citizens of the Commonwealth through high-speed connections to the Internet at their local public libraries; (3) public libraries should provide access to full text electronic resources that meet citizens' information needs; and (4) public library staff should assist citizens to use the Internet to access resources that will answer their questions and expand their knowledge. The Library of Virginia made no request in its 1998-2000 executive budget submission to fund the implementation recommendations.

In the fall of 1997, the Department of Education reported that Virginia's schools and libraries legitimately stood to receive $40 million from the universal service fund. Based on the Department's preliminary data and calculations, the average discount for Virginia schools was 60 percent; no school was projected to receive less than a 40 percent discount nor more than an 80 percent discount. In addition to the requirement that a state's public utility commission adopt the discounts for intrastate telecommunications services established by the FCC, schools which apply for discounted services must have an approved technology plan on file with the state's department of education to be eligible. Every Virginia school division has filed a technology plan with the Department.

The FCC established an independent, not-for-profit corporation, the Schools and Libraries Corporation (SLC), to administer the universal service fund for schools and libraries. Early in 1998, the SLC developed and released several forms in connection with the universal service fund: Form 470 identifies the services requested, Form 471 identifies how much of a discount is requested, and Form 486 verifies receipt of the requested services. On January 30, 1998, the SLC opened its website at www.slcfund.org. With the opening of the website, applications began to be accepted for universal service fund discounts. All schools and libraries who filed applications (manually or electronically) had their requested technology services posted on the

website to invite competitive bidding from vendors nationwide. January 30 also triggered the 75-day window during which applications received by the SLC were treated as if they had arrived simultaneously. The filing window for 1998 applications closed April 15, 1998.

On May 2, 1998, the SLC reported to the FCC that, based on a statistical sampling of universal service fund applications that had been filed to date, the estimated 1998 demand for discounts will be $2 billion. The estimate was submitted as part of the SLC's quarterly filing with the FCC. The program is funded up to $2.25 billion annually by fees collected from the telecommunications industry. The actual size of the 1998 fund is expected to be established soon by the FCC. No actual funding commitments have been made to any program applicants. The demand estimate figure is based purely on a statistical sampling of applications. The SLC is still in the process of reviewing the more than 30,000 applications it has received, and will not be making funding commitments for some time. Applicants who are approved for discounts will be notified directly, as will their service providers. At that time, the SLC will calculate the exact total of funding commitments and post this figure to the website.

2. Recommendations

Advisory Committee One recommended that JCOTS:

- encourage the SCC and the Department of Education to continue their efforts to implement the universal service fund provisions of the FTA and request each agency to provide JCOTS with status reports in the fall of 1998.

- monitor the work of the Library of Virginia in completing the strategic technology plan for Virginia's public libraries in anticipation of the final report's presentation to JCOTS in the fall of 1998 pursuant to HJR 444 (1997).

- support an amendment to the 1998-2000 budget to fund $50,000 grants to an equal number of public libraries in each of the six regions of the Virginia Library Association for hardware, software, and/or internal networking to support new Internet access services or improve existing Internet access services. (A single pilot in each region would require a $300,000 appropriation; two pilots in each region would require $600,000; and so on.) Modest funding for additional staff at the Library of Virginia to assist and monitor the pilot project sites should be included in such a budget amendment.

B. ADVISORY COMMITTEE TWO (GOVERNMENT STRUCTURE) DELEGATE ALAN A. DIAMONSTEIN, CHAIR

Charge: To review the Joint Legislative Audit and Review Commission's (JLARC) study of information technology in Virginia's state government.

1. Summary

Highlights of the history of the efforts by the legislative and executive branches of Virginia's state government to effectively and efficiently process information technology issues indicate that:

- In 1977, House Joint Resolution (HJR) 7 established the Legislative Scientific and Technology Advisory Committee to plan and implement a project to incorporate scientific and technological information into Virginia's legislative process, and funding was received from the National Science Foundation to establish the project.

- Beginning in 1978 and continuing for about two years, a science advisor position was created in the Division of Legislative Services, and such advisor provided research to legislators on matters related to science and technology, completed studies requested by standing or study committees, and served as staff to standing committees and subcommittees dealing with science and technology.

- In 1979, in House Document No. 15, the Legislative Scientific and Technological Advisory Committee recommended that the Committee provide research, assessment, and recommendations on technologies applicable to the legislature and the legislative process, study how to tap the private sector into valuable sources of technical information, and study appropriate issues as the need arises.

- In 1983, Governor Baliles established a task force on science and technology to recommend ways in which Virginia could effectively retain and attract high-technology enterprises and assist citizens, communities, and institutions in preparing for societal changes resulting from the technological revolution.

- The task force recommended the creation of a policy advisory group of leaders from industry and education to monitor state agencies' performances in carrying out task force recommendations, provide guidance to the Governor and state agencies, assist in mobilizing Virginia's efforts on the federal level, serve as ambassadors to high-technology industries considering a Virginia location, and review the plans and performance of the Division of Industrial Development in technology matters.

- The task force further recommended that such policy advisory group be active in formulating policy, have high visibility, and be specifically identified with science and technology, and that the Governor should be closely involved, perhaps as chairman.

- The task force further recommended that the Governor create a high-level position within his cabinet structure to expedite and coordinate regulatory procedures associated with new or expanding business enterprises and to provide staff leadership to the policy advisory group.

- In 1984, by Chapter 746, the General Assembly abolished the Department of Computer Services and created the Department of Information Technology (DIT) (§ 2.1-563.13 et seq.).

- In 1984, by Chapter 782, the General Assembly created the Innovative Technology Authority Act (§9-250 et seq.). The Authority then established the Center for Innovative Technology (CIT).

- In 1988, in Senate Document No. 3, JLARC recommended that the General Assembly establish a supervisory board, called the Council on Information Management (CIM), to provide permanent, continuous planning for Virginia's information technology course.

- In 1988, by Chapter 424, the General Assembly created CIM (§ 2.1-563.28 et seq.) and gave it authority to develop an information technology plan and to establish policies to address information technology issues.

- In 1993, in Senate Document No. 16, a review committee, charged to study CIT's performance and potential and staffed by JLARC and the Department of Planning and Budget, concluded that Virginia's strategic plans for science and technology were insufficient and recommended that the General Assembly adopt a resolution creating a task force to coordinate development of a statewide strategic plan for science and technology.

- In 1993, HJR 390 established a two-year task force on science and technology to report on the status of the recommendations made in 1983 by Governor Baliles' task force on science and technology, coordinate the development of a statewide strategic plan for science and technology, and examine whether a permanent council on science and technology should be created.

- In 1995, HJR 447 continued the task force on science and technology for another year and requested the task force to consider recent and ongoing initiatives of other organizations focusing on science and technology issues. HJR 714 asked the task force to study opportunities and incentives for information and communications technology to meet public needs.

- In 1996, in House Document No. 46, the task force on science and technology reported that no Virginia Governor had officially appointed a Science and Technology Advisor to the Governor, nor had any Cabinet-level position been created that specifically expedited and coordinated regulatory procedures associated with new or expanding technology business enterprises.

- In 1996, HJR 195 created a joint subcommittee to continue and expand the work of the task force on science and technology. Included among the HJR 195 study objectives were considerations of the need for and feasibility of establishing a Secretariat for Science, Information, and Technology and an authority, similar to the Rural Electrification Authority, to disseminate technology across the Commonwealth. The study was also to examine the organizational possibilities for a technology secretariat or authority that would best promote universal access to the information highway by all citizens of the Commonwealth. The subcommittee published its final report as House Document No. 81 (1997).

- In 1997, by Chapter 847, the General Assembly created the Joint Commission on Technology and Science (§ 30-85 et seq.) as a permanent legislative commission charged to study all aspects of technology and science and to promote the development of technology and science in the Commonwealth through sound public policies.

- In 1997, HJR 566 requested the Governor to appoint a Technology and Science Advisor within his Cabinet to advise him on technological and scientific issues in Virginia and to assist him and executive branch agencies with any consequent reorganization of state government.

It is in this historical context that the JLARC report was released on November 10, 1997. Item 14 of the 1996-98 appropriation act had directed JLARC to conduct a study of data processing services for state agencies and institutions, including the feasibility and advisability of privatizing the state data center located at DIT, and to evaluate the effectiveness of statewide information technology planning and standards, telecommunications services, systems development services, and computer and telecommunications information technology operations of state agencies and institutions of higher education. Because of the technical nature of the study, Gartner Group Consulting Services was hired to conduct the review.

The complete JLARC and Gartner Group reports are available in portable document file (PDF) format from JLARC's webpage at http://jlarc.state.va.us. The study, presented to Advisory Committee Two on November 12, 1997, produced the first benchmarking analysis of the Commonwealth's computer and telecommunications services. The report concluded that:

- There are currently no sound business reasons to privatize the state data center. The benchmarking analysis indicated that the state data center was relatively efficient in comparison to peer data center operations. The state data center was given high marks for quality by customer agencies.

- Telecommunications services for state agencies are already privatized and the Commonwealth should continue to use private vendors for such services.

- Further privatization of information technology services may be appropriate in the future, and should be guided by uniform analyses of outsourcing alternatives.

- The Commonwealth should discontinue the use of the Unisys mainframe (except for the ADAPT system in the Department of Social Services) by the year 2002.

- A client/server group should be established in the state data center to provide centralized computing for major agency applications.

- Administration of wide area networks, including the Commonwealth Telecommunications Network, Net.Work.Virginia, and the Metropolitan Area Network, should be consolidated in a central agency. Agencies should be prohibited from developing independent networks.

- The Commonwealth should reorganize its information technology functions by creating a chief information officer (CIO) with responsibility for all information technology policy, planning, and services. The CIO should be appointed by the governor and serve as a member of the governor's cabinet.

- A Year 2000 project management office and other policy, planning, and standards functions should be established in the office of the CIO.

- Information technology services should be provided by a new Department of Technology Services, whose director would report to the CIO. The new agency would be formed out of the abolishment of DIT and CIM. The current combined maximum employment level of both agencies is 361; the new agency should have a maximum employment level of 312.

Michael Thomas, Secretary of Administration, stated that he was pleased with the majority of the Gartner Group report. However, rather than consider the privatization of the state data center as an "all-or-nothing" proposition, Secretary Thomas encouraged an application-by-application review to determine the appropriateness of outsourcing, especially at the time state agencies discontinue use of the Unisys mainframe. With regard to the recommendation that the General Assembly create a Technology Services Council to advise and assist the CIO in the development of plans, standards, and policies related to information technology, Secretary Thomas urged that the membership of such a council include private sector representatives.

2. Recommendations

In the context of at least a 20-year effort by the legislative and executive branches of government to effectively and efficiently process information technology issues, it is imperative that some centralized entity within the executive branch of state government bear ultimate responsibility and accountability for the administration, oversight, and achievement of the Commonwealth's information technology goals. As such, Advisory Committee Two recommended that JCOTS generally support the findings and recommendations of the JLARC report and legislative implementation thereof in the 1998 Session of the General Assembly.

However, given the apparent contradiction between the report's recommendations to maintain the existing decentralized approach for information technology services for institutions of higher education (except for wide area networks) and to establish the responsibility for wide area network research for state government in Virginia's research universities, it seems premature, at this time, to transfer administration of Net.Work.Virginia to a centralized telecommunications organization.

C. ADVISORY COMMITTEE THREE (YEAR 2000)
DELEGATE JOE T. MAY, CHAIR

Charge: To study issues related to the Year 2000 compatibility of the Commonwealth's computers, software programs, databases, and networks.

1. Summary

Advisory Committee Three met three times during the 1997 interim--September 8, October 14, and November 10. The Year 2000 "problem" results from using and storing date information in a computer with two digits for the year, e.g., "97" for "1997." Using a two-digit date can result in erroneous calculations for the Year 2000. For example, 2000 minus 1954 equals 46 when using a four-digit date. However, with a two-digit date, 00 minus 54 equals -54. The solution is to repair, replace, or retire programs with this problem. In some situations, the problem can be safely ignored (e.g., a report that prints the year as 00).

Item 14F of the 1997 appropriation act directed the Joint Legislative Audit and Review Commission (JLARC) to assess the current status of Year 2000 compliance of state agency computer systems, including the cost and funding sources, to ensure that systems are compliant. Earlier in 1997, JLARC contracted with the Gartner Group, a consulting firm based in Stamford, Connecticut, to conduct the assessment. Twenty-nine agencies and institutions of higher education--encompassing 85 percent of state activities and involving some 450 different computer applications--were selected for detailed analysis. The Gartner Group's preliminary findings indicated that most state agencies and institutions were generally aware of the Year 2000 problem, but were very far away from certifying Year 2000 compliance. Moreover, agencies had not really come together in a coordinated effort to remedy the "millennium bug." The Council on Information Management (CIM) had probably done as much as it could within its scope of statutory authority; however, without a coordinated effort, the costs for certifying Year 2000 compliance would be much higher. JLARC asked the Gartner Group to include specific recommendations on how to coordinate the state's efforts in its final report.

At the September meeting, CIM outlined its five-step plan to Year 2000 compliance: Awareness, Assessment, Renovation, Validation, and Testing and Implementation. Per Item 86 of the 1997 appropriation act, interest-free treasury loans, not to exceed $1 million to any agency or institution nor $10 million in aggregate authorizations, are available for the purpose of bringing computer information systems into Year 2000 compliance. As of September 1997, four requests had been received—Virginia State University and the Departments of Accounts, Taxation, and Corrections. Additionally, CIM contracted with 13 vendors through an earlier Request for Proposal to assist agencies with their Year 2000 efforts.

The Department of Information Technology (DIT) discussed its role in providing computer processing services to over 250 customers. DIT does not own the software applications that its customers use; therefore, its customers are responsible for pursuing CIM's five-step plan to Year 2000 compliance themselves. DIT is responsible for mainframe hardware and software, application platforms, Year 2000 phase tools, and time travel management. For example, DIT's

customers can use its time machine to simulate a date in the Year 2000 or beyond to test whether a system that is supposed to be Year 2000 compliant really is.

Presentations by the Virginia Retirement System, Department of Transportation, and Department of Education revealed that these agencies are about halfway through CIM's five steps to Year 2000 compliance, although the steps are not of equal effort.

During a lively question-and-answer session at its September meeting, the Advisory Committee expressed concerns that:

- Some agencies are really not able technically to identify their potential Year 2000 problems. This conclusion is based on the amount of inaccurate or incomplete self-reported data supplied to the Gartner Group over the summer.
- Pursuing a software/hardware replacement strategy is very risky, and any agency who is just thinking about doing that now will likely run out of time to successfully implement it.
- Agencies need to have a "Plan B" in the works if "Plan A" does not work.
- The relationship between the lines of computer code in an application and the money needed to fix the Year 2000 problem in that code is not a straight-line relationship. This situation contributes to the uncertainty accompanying any dollar estimate to fix the Year 2000 problem.
- The relationship between CIM and DIT is not clear, and neither agency is in a position to compel agencies to deal with the millennium bug.
- The anecdotal experience of several members of the Advisory Committee in the private sector is that most of the organizations who are on or ahead of schedule in fixing the Year 2000 problem have a single point of contact within their organizations. That is, a single position within the organization has the authority and means to implement the Year 2000 solution(s).

At the Advisory Committee's October meeting, JLARC presented the results of the Gartner Group report. (This report is available in portable document file (PDF) format from JLARC's webpage at http://jlarc.state.va.us.) The questions asked by JLARC and the Gartner Group about the Year 2000 problem in Virginia's state government were:

- Are state agency systems Year 2000 compliant?
- What will it cost to ensure compliance?
- How will agencies and institutions fund Year 2000 system modifications and replacements? What funding sources are available?

Among the report's key findings:

- As an initial step in the overall compliance process, CIM has done a good job of gathering data and creating awareness of the Year 2000 problem among state agencies and institutions.
- Virginia state government's Year 2000 efforts have been structured as a confederation of separate projects rather than as a cohesive planned project. The efforts have been

complicated by the autonomy of state agencies. Many agencies see themselves as being on their own.

- Many agencies lack the ability or effort to discern levels of importance among applications. Agencies have not established a framework for setting priorities. A number of agencies report having competing initiatives which will overburden staff.
- Some agencies face larger risks in completing Year 2000 projects successfully because of factors related to staffing. Among the concerns were staff shortages in 14 agencies, high staff turnover in eight agencies, and low tenure in one agency.
- About 25 percent of the state's work related to Year 2000 compatibility has been completed; however, there has been relatively little detailed planning with regard to testing and compliance, which should comprise at least 50 percent of the total Year 2000 remediation effort.
- For the 29 sample agencies, overall costs for Year 2000 efforts are estimated to range between $80.2 million and $83.7 million. The total for all state agencies may exceed $100 million.

To address these concerns, the Gartner Group report recommended that Virginia:

- Establish a project office with authority to set standards, prioritize compliance efforts, monitor progress, and certify Year 2000 compliance.
- Refocus its compliance efforts on mission-critical business applications.
- Establish personnel retention policies and plans, including financial incentives.
- Begin now to develop detailed plans for testing and certification across all agencies and institutions.

The report did not directly address the need for adequate funding to implement Year 2000 solutions but such statement was implicit throughout the presentation.

To close the October meeting, CIM expressed support for the report's recommendations; the Advisory Committee discussed the report's methodologies and assumptions; and David Sullivan, president of Zonar Corporation, presented an alternative solution to fixing the Year 2000 problem, i.e., viewing the data, not the software programs, as the problem. The Advisory Committee did not believe that a "silver bullet" software solution to the Year 2000 problem exists; however, several software adjuncts are available which will assist with Year 2000 remediation.

At the Advisory Committee's November meeting, JLARC discussed the Gartner Group's report on information technology in Virginia state government. (This report is also available in PDF format on JLARC's webpage at http://jlarc.state.va.us.) The report's principal recommendation is that Virginia reorganize its information technology functions by creating a chief information officer (CIO) with responsibility for all information technology policy, planning, and services. The CIO should be appointed by the governor and serve as a member of the governor's cabinet. As it relates to the Year 2000 problem, the Year 2000 project management office could be established and housed in the Office of the CIO as a temporary project until its completion to

give it a high level of attention, authority, and visibility. However, regardless of how the information technology structure of state government is reorganized, the need to establish the Year 2000 project management office is immediate.

The Department of Planning and Budget (DPB) reported that budget requests from state agencies and institutions to fix Year 2000 problems (due to DPB by October 24, 1997) were $53.5 million in general funds, plus $3.2 million in non-general funds, for a total of $56.7 million. Higher education requests accounted for two-thirds of total general fund dollars. As it prepared the Governor's budget, DPB, with assistance from CIM, asked two policy questions to determine the accuracy of agencies' and institutions' requests: 1) What level of funding is appropriate? and 2) Is the requested Year 2000 remediation mission critical?

With regard to the proposed Year 2000 project management office, DPB is attempting to determine appropriate funding and staffing levels; whether employees would be state employees or independent contractors; where the office should be located organizationally and who it should report to; and appropriate leverage to ensure effectiveness. When asked about DPB's own Year 2000 compliance, the agency reported that the budget system has been converted and tested; however, the FAT system, which executes the budget, is not yet Year 2000 compliant.

To close the November meeting, Chairman May asked each member of the Advisory Committee to share his thoughts on the Year 2000 problem and the JLARC and Gartner Group reports. In sum, the Advisory Committee:

- Expressed unequivocal and unanimous support for the immediate establishment of a Year 2000 project management office.

- Was gravely concerned that both the estimated costs to fix the Year 2000 problem and agency and institution budget requests were too low, possibly by as much as two to three times the amount necessary to successfully complete the project. Particular concerns were expressed over the Gartner Group's use of labor rates for state employee programmers, which are one-third to one-half times lower than labor rates for private industry programmers, and because the necessary state employee programmers do not exist.

- Felt strongly that emergency funding through treasury loans or some other mechanism should be included in the 1998-2000 budget.

- Was concerned about the accuracy of the data in the Gartner Group report for several reasons, including the lack of validation of agency and institution responses; a too-small sample (29 agencies and institutions); the lack of comparisons to other states' costs and compliance strategies; too small a range between the best-and worst-case cost scenarios to fix the Year 2000 problem ($80 million to $83 million); and the lack of a proposal and cost analysis to bring personal computers and time-dependent equipment such as elevators, climate controls, etc., into Year 2000 compliance.

- Recognized that the Commonwealth's labor pool to fix Year 2000 problems should consist of a combination of full- and part-time state employees (with appropriate incentives to stay in public service), independent contractors, and possibly, graduate students in computer-related fields working for academic credit and/or compensation. To the greatest extent possible, Virginia state government should shift the cost to fix Year 2000 problems to its existing vendors.

- Recommended that because of the attendant high risk of failure, implementation of replacement systems should not be undertaken after July 1, 1998, by state agencies and institutions unless compelling circumstances exist.

- Recommended that the Year 2000 project management office be vested with authority and staff to assist localities on a limited basis, if so requested.

- Felt that legislation asserting the Commonwealth's sovereign immunity from Year 2000-related lawsuits was appropriate.

On December 19, 1997, the Governor's 1998-2000 budget (House/Senate Bill 30) proposed over $47.1 million in total new funds (general funds and others) to fix Year 2000 problems in the Commonwealth's computers, software programs, databases, and networks. Of this amount, $28.2 million (59.9 percent) is recommended for institutions of higher education; $18.9 million (40.1 percent) is recommended for all other state agencies that requested funding. The Governor's introduced budget also proposes to establish and fund a Year 2000 project office to be located in CIM and to report directly to the Secretary of Administration. The project management office would have broad legal authority to set standards, approve agency and institution implementation plans, and establish compliance certification procedures. Through amendments to the 1997 appropriation act proposed in House/Senate Bill 29, funding for the project management office would begin on January 1, 1998. The Governor's proposed budget did not include the treasury loan program created in Item 86 of the 1997 appropriation act.

2. Recommendations

Advisory Committee Three recommended that JCOTS support:

- the immediate establishment of a Year 2000 project management office and its appropriate level of funding in the 1998-2000 biennial budget. The project management office should be vested with authority and staff to assist localities, if so requested.

- adequate levels of funding in the 1998-2000 biennial budget to ensure the certifiable remediation of the Commonwealth's computers, software programs, databases, and networks on or before December 31, 1999.

- an amendment to the 1998-2000 budget to provide emergency funding for Year 2000 remediation through a treasury loan program or some other mechanism.

- legislation asserting the Commonwealth's sovereign immunity from Year 2000-related lawsuits.

D. ADVISORY COMMITTEE FOUR (ELECTRONIC SIGNATURES) SENATOR PATRICIA S. TICER, CHAIR

Charge: To study issues related to the use of digital signatures in the Commonwealth, a process which began during the 1997 Session with the passage of Senate Bill 923 (Chapter 917 of the 1997 Acts of Assembly).

1. Summary

Effective July 1, 1997, Senate Bill 923 provided legal recognition of digital signatures exchanged between private parties. The bill also authorized the Commonwealth and its agencies, institutions, and political subdivisions to use digital signatures for the many transactions where traditional written signatures are required so long as they meet regulations adopted by the Council on Information Management (CIM). Senate Bill 923 required CIM to adopt final regulations by September 1, 1998.

At Advisory Committee Four's meeting on September 24, 1997, CIM's director reported that CIM may need to adopt regulations sooner than September 1, 1998. The agency, which recently enlisted help from researchers at Virginia Polytechnic and State University to assist its digital signatures effort, is tracking legislative and regulatory activities in other states. Preliminary analysis indicated that the approaches states have taken to enact and implement digital signatures are significantly different and that an attempt to standardize the approaches should be undertaken. CIM is participating in an effort, spearheaded by the National Association of State Information Resource Executives (NASIRE), the National Association of State Purchasing Officials (NASPO), and the National Association of State Comptrollers (NASC), to establish accreditation standards for "certification authorities" which issue "digital certificates."

In simple terms, a digital certificate is the electronic equivalent of a driver's license, credit card, or passport. A certificate typically includes identifying information about its holder (e.g., name, address, affiliation), a validity period, and a unique serial number. Certificates are issued by a trusted third party, which can be a public body or a private entity, known as a "certificate authority" (CA). The CA authenticates the identity of the certificate holder. Digital certificates are also used to ensure the integrity of an electronic transaction because they are issued in conjunction with a pair of encryption keys: one public, one private. The public encryption key is used to create a digital signature – a unique encoding of the electronic message – that can only be decoded with the corresponding private key. If the message is altered in any way after it is electronically signed, the recipient will know.

GTE Cybertrust is a private certificate authority based in Needham, Massachusetts. In 1987, GTE deployed the first public key encryption system, an encryption technique whereby the sender encodes a message using the recipient's public key, which can only be decrypted (opened) using the recipient's corresponding private key. For example, suppose a consumer visits a merchant's website to place an order for books. To protect her Internet transaction, the consumer can encrypt her order with a copy of the merchant's public key, found on its website. When the merchant receives the order, the transaction is decrypted using the merchant's corresponding

private key. Before the consumer and the merchant engage in this electronic transaction, each wants to authenticate the identity of the other. The consumer wants to know she is dealing with a real merchant and not a spoof website. The merchant wants to know the true identity of the consumer sending an order. GTE Cybertrust's role, like that of any CA, is to be the trusted third party which issues, revokes, renews, and manages the digital certificates which contain the public and private keys upon which the parties to this transaction are authenticated and the transaction is secured. GTE Cybertrust's U.S. public key encryption system currently supports two million public keys.

A very different type of electronic signature was explained and demonstrated by PenOp, Inc., founded in 1990 and based in New York. PenOp's research indicated that, globally, 2.3 million signatures are executed every minute. The company also studied four million paper forms and determined that 3.1 million required a written signature. PenOp concluded that the pen is the most common device in the world and that a person's individual handwritten signature has enjoyed a high level of acceptability in social, commercial, operational, regulatory, and legal contexts for centuries. Thus, the company sought to develop a technology which combined the acceptability of the handwritten signature with the reliability, accuracy, authenticity, and speed necessary to conduct electronic transactions.

The result is a technology which combines biometrics—an ability to gather information about the signer--and cryptography—an ability to secretly encode information. Biometric signature verification is used to establish a link between a person and her handwritten signature; cryptography is used to link the signature to a particular document. With PenOp, a person picks up a pen (electronic stylus) and signs her name. The signature is captured by a digitizer, thus creating an electronic record that is as legally effective as a paper signature. An encrypted biometric token, typically around 1,000 to 2,000 bytes, contains the signer's claimed identity (name, account number, email address), the date and time stamp, information which links the individual act of signing to a single document to prevent re-use of the signature, 42 signature measures (stroke direction, order, speed, acceleration, etc.), an alert to the signer as to why she is signing (thus maintaining evidence of informed consent), and the signature's image. PenOp's technology has been adopted by the Internal Revenue Service to conduct research on electronic filing of income tax returns and by a company which provides 401(k) retirement plans for use by its field sales staff of over 235 nationwide representatives to process new plan applications.

The Woodside Summit Group (WSG) discussed the Integrated Document Management System/Automated Records Management System Project of the Virginia Department of Transportation (VDOT). WSG, originally started in California and now with an office in Richmond, Virginia, was hired by VDOT to develop a records management system which reduces paperwork and saves time and money. The project involves a close examination of the agency's business processes to (1) develop records management policies and procedures; (2) determine what documents can be converted to electronic records; and (3) access whether a particular electronic record requires a digital or electronic signature. VDOT is now pilot testing pieces of the overall project, including how the use of digital signatures affects electronic recordkeeping.

2. Recommendations

Advisory Committee Four recommended that JCOTS refine Senate Bill 923 by:

- changing the word “digital” to “electronic” since digital signatures are generally described as a type of electronic signature;
- clarifying that the intent of the bill is the broad “use” of electronic signatures, which includes sending, receiving, and exchanging such signatures;
- clarifying that the validation and authentication of electronic signatures is tantamount to their use and acceptance; and
- cleaning up potentially inconsistent terms in Senate Bill 923 such as “person” and “party.”

It was also suggested that any refinements to Senate Bill 923 should remain technology neutral and continue to encourage the development of technology in this area.

E. ADVISORY COMMITTEE FIVE (CIVIL AND CRIMINAL LAWS) SENATOR EDWARD L. SCHROCK, CHAIR

Charge: To study the Commonwealth's civil and criminal statutes, rules, and regulations to identify those areas where the law has not kept pace with technological developments.

1. Summary

Advisory Committee Five met on Monday, December 15, 1997. During the summer of 1997, JCOTS had been asked by a subcommittee of the House Committee on Courts of Justice to review legislation related to computer trespass crimes, sponsored in the last few sessions by JCOTS member Delegate Joe T. May. House Bills 2802 (1997) and 168 (1996) provided that reckless disregard for the consequences of unauthorized use of a computer system would carry the same penalty as the intentional act. The bills also lowered the threshold for a Class 6 felony punishment for such acts to $1,000 worth of damage in a year to a person or property instead of $2,500 per act that results in property damage only. In Delegate May's absence, the bills were presented by Delegate Samuel A. Nixon, Jr., who explained that the legislation tracks language in the federal Computer Fraud and Abuse Act (18 U.S.C. § 1030).

Although the legislation is designed to give state prosecutors another tool to prosecute computer harms, the Advisory Committee expressed concern about how the law would be enforced, what jury instructions might look like, and how convictions would be obtained. Given the uncertainty surrounding these questions, the Advisory Committee supported the basic concept of Delegate May's legislation, subject to language being agreed upon that addresses these concerns.

Carlyle C. Ring, Jr., a commissioner on the National Conference of Commissioners on Uniform State Laws (NCCUSL), discussed the draft of Uniform Commercial Code (UCC) Revised Article 2B, which involves licensing information and purchasing computer-related products. The project, well into its second year, is a joint effort of NCCUSL, based in Chicago, and the American Law Institute (ALI) in Philadelphia. Mr. Ring, a Gainesville, Virginia, resident, chairs the 15-member drafting committee, which includes representatives from large and small companies. An average of 80 people typically attend the drafting committee meetings and participate as "observers." A draft released on December 1, 1997, encompassed material contained in four previous iterations. The December draft, totaling 209 pages, and a more recent version released April 15, 1998, are available from NCCUSL's website at http://www.kentlaw.edu/ulc/index.html.

One of two principal objectives of Revised Article 2B is to facilitate electronic commerce. The other is to provide a reliable set of rules by which agreements can be authenticated. The draft must achieve these goals in the context of such issues as shrink-wrapped software licensing, mass market software transactions, and on-line electronic commerce. To illustrate, if a consumer buys a computer disc containing an accounting software program, the disc is covered as a sale of goods by UCC Article 2. However, the accounting software program is intellectual property, which is not "goods" under Article 2. To use the accounting software, the consumer must have a license (making the consumer a "licensee") from the owner of the intellectual property (the

"licensor.") The rules covering the license should be very different from the rules covering the disc because intellectual property is governed primarily by federal law.

After a thorough review of the issues raised in the draft, Mr. Ring reported that support for the NCCUSL/ALI project is growing nationwide. Although several important issues must still be resolved, Mr. Ring felt that the process was winding down to a successful conclusion. ALI plans to meet in May 1998 to vote on the draft; NCCUSL hopes to promulgate Revised Article 2B at its July 1998 meeting to make it available to the states for immediate consideration and enactment. The draft's supporters indicate that prompt passage by each of the 50 states is essential to blunt a drive for federal preemption in this area, influence ongoing efforts to draft international law, and provide licensors and licensees with much-needed certainty and stability.

In a short impromptu presentation, Douglas Koelemay of the Northern Virginia Technology Council reinforced the need for a reliable set of rules to govern electronic commerce. It is estimated that by 2000, $180 billion in electronic transactions will occur worldwide. Mr. Koelemay urged the adoption of uniform standards which fit new types of business transactions and encouraged Virginia state government to set an example for other states to follow.

To close the meeting, Mary Devine, senior staff attorney with the Division of Legislative Services and counsel to the Senate Committee for Courts of Justice, brought the Advisory Committee up to date on JCOTS' law and technology survey and facilitated a roundtable discussion about future distribution and use of the survey. The survey, distributed in hard copy to a number of organizations, was also posted on JCOTS' webpage in the summer of 1997. The survey is an attempt to determine how technology-savvy lawyers are and how technology is affecting the practice and substance of Virginia law. Although a valuable learning experience about surveys, the survey has not generated enough responses to yield statistically significant results. (About 30 have been received.) Ms. Devine indicated that the survey is probably too long and broad in its current form and that future surveys should probably be shorter and more issue-specific.

2. Recommendations

Advisory Committee Five recommended that JCOTS:

- introduce legislation which captures the basic concept of Delegate May's computer trespass legislation and gives state prosecutors another tool to prosecute computer harms.

- introduce a joint study resolution creating a legislative subcommittee charged with drafting legislation for the 1999 General Assembly Session which implements UCC Revised Article 2B. The subcommittee should consist of members of JCOTS, the Senate Committee on Commerce and Labor, the House Committee on Corporations, Insurance, and Banking, and citizen members with considerable knowledge of and experience in Virginia's commercial law who represent the interests of both licensees and licensors. The subcommittee should be staffed by the Division of Legislative Services.

F. ADVISORY COMMITTEE SIX (BLUEPRINT FOR TECHNOLOGY-BASED ECONOMIC GROWTH)
SENATORS JANET D. HOWELL AND STEPHEN D. NEWMAN, CO-CHAIRS

Charge: To study Building a CommonWealth of Technology: A Blueprint for Technology-Based Economic Growth in Virginia (the "Blueprint") and make recommendations to JCOTS regarding its implementation.

1. Summary

Advisory Committee Six met three times during the 1997 interim--August 28, October 6, and November 24--to study the Blueprint, which was published in August 1997. The Blueprint is the product of two statewide technology summits (held in January and May of 1997) involving the efforts of hundreds of business leaders from six regions of Virginia (Greater Charlottesville, Greater Richmond, Hampton Roads, New Century Region, Northern Virginia, and Virginia's Region 2000) and seven technology industry sectors (aerospace technologies, biotechnology/biomedical applications, energy technology, environmental technology, high-performance manufacturing, information technology and telecommunications, and transportation technologies). George C. Newstrom, corporate vice president and group executive for EDS, and John O. Wynne, president and CEO of Landmark Communications, Inc., served as summit co-chairs. The Blueprint is signed by 28 business and industry leaders of the Commonwealth.

The Blueprint is premised on the belief that Virginia is currently in a second tier of technology states but has the potential to become a global leader in certain technology areas. To seize global leadership, the Blueprint proposes a series of two-, three-, and five-year and long-term goals, thus illustrating that implementation of the Blueprint is an ongoing process at both state and local levels. In the preface, the document's signatories formalize their "commitment to seeing the Blueprint's recommendations realized, so that Virginia will emerge in the 21st Century as a global technology leader." The Blueprint, the regional and industry sector reports, and related documents are available from the Center for Innovative Technology's (CIT's) website at http://www.cit.org under the "Virginia Technology Summit" button.

At the September meeting, Bob Laurence, president and CEO of Novadyne, reported that information technology services are the engine of Northern Virginia's economic growth and success, accounting for 23 percent of all jobs, 26 percent of all income, and 47 percent of all companies in the region. The United States is dominant in the $300 billion worldwide market for information technology services; however, the geographic center of information technology services is up for grabs. The competition is fierce, as domestic and international competitors are working hard to establish their positions. Mr. Laurence encouraged Virginia to stake its claim as the international home of electronic commerce. Virginia is uniquely qualified to become the international leader in electronic commerce: the Internet was developed and deployed here, many Internet organizations and leading electronic commerce companies are located here, 50 percent of all Internet traffic moves through Northern Virginia, and Virginia's 650,000 miles of fiber-optic cable is the most of any state in the nation. To become the world leader in electronic commerce, Mr. Laurence urged the implementation of the Blueprint in Virginia.

Dr. Robert Templin, president of CIT, reviewed the year-long process of developing the Blueprint, which included two technology summits (one in Norfolk and one in Richmond), each with nearly 500 participants. The Blueprint's chief finding is that technology is a permanent fixture in Virginia's economy. Today, 2,450 technology companies are located in the Commonwealth. By 2002, it is estimated that 4,000 technology companies will be based in Virginia. Dr. Templin discussed a recent study released by the College of William and Mary which concluded that 63 percent of the growth in Virginia's gross state product over the last five years can be linked to high-technology industries and related support services for high-technology workers. Currently, however, one out of 10 information technology jobs is going unfilled and that number is expected to double in the years ahead. A recent study by George Mason University concluded that 19,000 information technology jobs are currently unfilled in Virginia. The Blueprint calls for Virginia to "significantly raise its capacity to 'grow its own' high-technology workers or face the loss of high-wage technology jobs to other countries." The Blueprint recommends that the mismatch between the skills required in the knowledge-based workplace and the skills of the Commonwealth's workforce be addressed in the near term, i.e., within two years.

After Daniel R. Bannister, chairman of DynCorp, presented the Blueprint, Delegate Jack H. Rust, Jr., discussed his proposal to create a Virginia Technology Training Council and Student Loan Fund. The Council would develop certificate programs to meet workforce needs; the loan fund would be set up as a revolving fund to assist with tuition. Delegate Rust estimated that an initial appropriation of $10 million a year would assist 5,000 students. Dr. James V. Koch, president of Old Dominion University, discussed a proposal for ODU to open and operate the Hampton Roads Work Force Technology Center in cooperation with the Information Technology Association of America, other public and private higher education institutions, and numerous private and public employers.

The meeting closed with a roundtable discussion among the Advisory Committee and representatives from the Virginia Technology Council; the Virginia Association of Regional Technology Councils; Virginia's regional technology councils in Northern Virginia, Hampton Roads, Winchester, Harrisonburg, and Danville; the State Council of Higher Education in Virginia; the Virginia Community College System; and private sector employees and consultants. Many interesting and promising proposals were put forth.

At the October meeting, Dr. Patsy Brown from CIT discussed how various stakeholders in the Blueprint have begun to develop their responses and implement the Blueprint's recommendations, the industry sector's strategic plans, and the regional visions. Dr. Brown reported that the industry sectors have stayed very active since the technology summits. For example, the biotechnology/biomedical applications industry sector established a mentoring program. The number of regional technology councils has also continued to grow.

Gerry Ward, executive director of Virginia's Philpott Manufacturing Extension Partnership, described the mission of the Partnership as fostering economic prosperity by helping manufacturers become more competitive. To achieve this, specialists work with manufacturers to assess performance and develop and implement projects that improve productivity and

profitability. These services are particularly helpful to small manufacturers (those with 500 employees or fewer) because, in comparison to larger companies, these manufacturers find it difficult to keep pace with rapidly changing technology and markets and access neutral advice and financing. In order to provide the Partnership's services across the Commonwealth, a $200,000 budget request has been made to complete the manufacturing extension network statewide.

During a roundtable discussion to close the October meeting, the Advisory Committee agreed to focus its attention on determining how much it might cost to implement the Blueprint, what the two-year Blueprint goals should be, and government's appropriate role in implementing the Blueprint.

Discussion at the Advisory Committee's November meeting was led by Dr. Maxine Lunn from CIT and the Blueprint's principal author. In following up on the Advisory Committee's request to "cost-out" implementation of the Blueprint, Dr. Lunn discussed the details of CIT's projected cost of $34.1 million to implement the Blueprint during the 1998-2000 biennium. Additional funding would be required to implement five-year and long-term recommendations.

More than 70 percent of the total $34.1 million cost (or $25.6 million) would fund initiatives to remedy the significant mismatch between the information technology requirements of the workplace and the skills found in Virginia's available workforce. None of those dollars would be directly appropriated to CIT. Additional moneys, totaling $8.5 million, would be appropriated to CIT to fund the development of Virginia's technology infrastructure ($5 million), entrepreneurial environment ($2 million), and technology deployment ($1.5 million). Dr. Lunn explained that the total $34.1 million estimate does not include costs to deploy a statewide broadband telecommunications network; replace the business, professional, and occupational licensing (BPOL) tax; and set up a state-sponsored seed capital fund, all of which are recommended in the Blueprint.

$10.6 million of the $25.6 million for workforce initiatives would fund five workforce training centers (with a commitment to establish 10 more over the next decade). This cost would not include money already allocated for the Regional Competitiveness Act (§ 15.2-1306 et seq.) nor a proposed tuition loan guarantee fund; however, the cost does include funding for noncredit instruction programs. (Noncredit education for workforce training in Virginia is being studied by a joint legislative subcommittee, chaired by Delegate Alan Diamonstein, created by House Joint Resolution (HJR) 622 (1997).) Dr. Lunn explained that the Virginia Community College System, the Department of Business Assistance, and CIT have each announced different proposals to address the workforce issue. After some discussion of who is or should take the lead on this issue, the Advisory Committee recommended that regardless of the proposal or combination of proposals ultimately selected and pursued, strong consideration for workforce training centers should be given to Northern Virginia, Hampton Roads, Lynchburg, Shenandoah Valley, Danville/Pittsylvania County, Richmond/Central Virginia, and Roanoke. These locations were suggested because of the high level of activity and commitment to information technology already demonstrated in the areas.

The additional $15 million for workforce initiatives would begin to develop the pipeline for increasing the number of Virginians graduating in engineering, computer science, and related technical fields. This issue is also being studied by the State Council of Higher Education for Virginia (SCHEV), pursuant to Senate Joint Resolution (SJR) 218 (1997). The resolution requested SCHEV to examine the demand for computer scientists, engineers, and other technologically skilled workers in Virginia industry. SCHEV's study, published as Senate Document No. 22 (1998), reports that a number of recent studies have been conducted by various organizations attempting to quantify the much-publicized shortage of technology workers in Virginia. These studies indicate that to keep pace with the growing demand, the Commonwealth needs to supply approximately 110,000 *new* technology workers over the next five years (22,000 per year). Not all of these jobs will require formal degrees; on the other hand, the 22,000 figure does not take into account jobs which require some level of technological competency but are not completely technological in nature (e.g., bank tellers, insurance agents, retail merchants, etc.). This statistical shortcoming highlights one of the major challenges in closing the gap between demand and supply, i.e., developing a clear picture of the skills and competencies required in a rapidly changing work environment.

Currently, Virginia's colleges and universities award about 16,000 degrees in engineering, computer science, and related technical fields each year. The Blueprint establishes the long-term goal of tripling the number of two- and four-year graduates to about 48,000 each year. Dr. Lunn explained that several proposals have also been suggested to address this issue, some of which include a recognition that K-12 education is the reservoir from which the higher education pipeline draws. Although earlier drafts of the Blueprint included K-12 education, the final Blueprint does not.

The Advisory Committee agreed that achieving this Blueprint goal is the shared responsibility of higher education, K-12 education, and the private sector. As such, it was suggested that the Secretaries of Commerce and Trade and Education be charged with the responsibility of developing a plan to achieve the Blueprint's goal of tripling the number of two- and four-year graduates in engineering, computer science, and related technical fields. The plan would consider K-12 education, the use of financial incentives (e.g., tax credits and tuition assistance), partnerships with the private sector, and adequate representation of women and minorities in these fields.

The estimated $5 million for Virginia's technology infrastructure includes funding a strategy to attract federal research and development dollars to Virginia ($1 million to create a technology growth fund), establishing two "new generation" technology development centers ($2 million), and beginning the process of doubling state-supported research and development ($2 million). After discussing the pressing need for Virginia to show strong support for research and development by committing its own funds in order to attract federal grants and designations, the Advisory Committee voted to suggest increasing the proposed technology growth fund to $2 million. Such an increase would raise the cost to implement the Blueprint during the 1998-2000 biennium from $34.1 million to $35.1 million, including raising CIT's funding from $8.5 million to $9.5 million.

The Advisory Committee felt that increasing the technology growth fund was particularly appropriate in light of CIT's ongoing study of Virginia's technology and science assets pursuant to SJR 226 (1997), published as Senate Document No. 8 (1998). CIT's study indicates that as a whole, Virginia's science and technology assets are key to supporting existing and emerging technology-based industries as they compete in a global economy. The assets include the Applied Research Center, Biotechnology Research Park, Biotech Infomatics Center, Free Electron Laser, Langley Full-Scale Wind Tunnel, Smart Roads Project, Virginia Institute for Micro-Electronics, Virginia Modeling and Simulation Center, Virtual Reality Center, and Wallops Island Space Flight Facility. However, to fully capitalize on all the potential research, development, and commercialization opportunities, the report recommends:

- creating a technology growth fund to meet federal matching requirements on certain projects;
- establishing new technology innovation centers to leverage additional funding from industry and the federal government;
- developing a statewide strategy to attract and keep federal dollars for research and development assets;
- implementing a statewide, fully integrated technology transfer network; and
- documenting the value of university-affiliated research parks and determining the appropriate level of state support.

Given the great value and potential of these assets, and others to be identified by CIT in the future, the Advisory Committee suggested that Governor-elect Gilmore and the Virginia Congressional Delegation be apprised of CIT's initial report and encouraged to actively participate in the report's recommendation to develop a statewide strategy to attract and keep federal dollars for research and development assets.

The $2 million cost for developing Virginia's entrepreneurial environment includes $1 million for establishing two technology-oriented incubators or entrepreneurship centers (with a commitment to five more over the coming decade) and $1 million to begin establishing a statewide technology transfer network. The $1.5 million cost for technology deployment includes $400,000 for CIT, in partnership with Virginia’s Philpott Manufacturing Extension Partnership, to complete the manufacturing extension network statewide and $1.1 million for CIT to complete plans to improve access to and usage of a statewide broadband telecommunications network for electronic commerce.

To close the meeting, Dr. Lunn reported that CIT, through the executive budget process, had formally requested $8.5 million to fund its role in implementing the Blueprint during the 1998-2000 biennium. Along with a $20.6 million request to maintain its funding at the 1996-98 level, the total CIT budget request for 1998-2000 was $29.1 million. On December 19, 1997, the Governor's 1998-2000 budget (House/Senate Bill 30) proposed approximately CIT's funding level for the current biennium (slightly over $21.2 million), but included no additional funds for Blueprint implementation. The Governor's proposed budget includes some moneys for workforce training in higher education budgets.

2. Recommendations

Advisory Committee Six recommended that JCOTS:

- support amendments to the 1998-2000 budget which fully fund implementation of the Blueprint at levels recommended by Advisory Committee Six ($26.5 million for workforce training and $9.5 million for CIT's initiatives related to developing Virginia's technology infrastructure, entrepreneurial environment, and technology deployment).

- introduce a joint study resolution requesting the Secretaries of Commerce and Trade and Education to develop a plan to achieve the Blueprint's goal of tripling the number of two- and four-year graduates in engineering, computer science, and related technical fields. The plan would consider K-12 and higher education, the use of financial incentives (e.g., tax credits and tuition assistance), partnerships with the private sector, and adequate representation of women and minorities in these fields.

- introduce a joint study resolution requesting CIT to study and document the value of university-affiliated research parks and determine the appropriate level of state support.

- introduce a joint study resolution requesting CIT to continue its study of Virginia's technology and science assets and assist in developing a statewide strategy to attract and keep federal dollars for research and development assets.

- apprise Governor-elect Gilmore and the Virginia Congressional Delegation of Senate Document No. 8 (1998) and encourage them to actively participate in the report's recommendation to develop a statewide strategy to attract and keep federal dollars for research and development assets.

III. COMMISSION INITIATIVES

A. VOTING ON THE INTERNET

At JCOTS' second meeting on September 24, 1997, Robert P. Yudkin of the IBM Corporation demonstrated the "Voting Booth of the Future," a multimedia kiosk developed by IBM at the request of the Connecticut Secretary of State for use at the 1995 Worldwide Special Olympics. The system utilizes still photos, graphics, and sound to show how citizens vote today and how voting over the Internet could look in the future.

Under the current voting process, voter participation is declining, especially among 18-to-25-year-olds (the age group with the most access to computers and the Internet); many people do not like to go to a polling place because it is inconvenient or inaccessible; and the current process, over 200 years old, is expensive. For these reasons, Mr. Yudkin urged Virginia (and other states) to consider voting via the Internet, which millions of people can access from their homes, offices, schools, and libraries. Short of or in addition to the actual act of voting, the Internet could also be used to provide information on registration drives, distribute registration cards, register voters, communicate between election precincts, provide information about the candidates, take public opinion polls, report campaign finances, distribute sample ballots, redistrict, and request absentee ballots.

Technology currently exists which enables citizens to request absentee ballots via the Internet; however, according to Mr. Yudkin, no state yet permits it. He enthusiastically encouraged Virginia to be the first state to develop a pilot project which would permit absentee voters to make an advance request for an absentee ballot. This would be the smallest implementation step that any state could take towards voting via the Internet. Other implementation steps include passage of electronic signature legislation (which Virginia did in 1997), passage of other enabling legislation and/or constitutional amendments, determining the look and presentation of the Internet ballot, and expanding the pilot project to permit the actual act of voting an absentee ballot via the Internet. In his view, Mr. Yudkin predicted that the first vote will be cast via the Internet in 1998; by 2002, Internet votes will be accepted in more than half the states; and by 2012, 50 percent of all votes cast will be cast via the Internet.

Mary Spain, senior staff attorney at the Division of Legislative Services and counsel to the House and Senate Committees on Privileges and Elections, discussed the legal and practical requirements to voting via the Internet. For example, Article II, Section 3 of Virginia's constitution discusses the method of voting in fairly broad language; however, the section provides that "the ballot box or voting machine shall be kept in public view and shall not be opened, nor the ballots canvassed nor the votes counted, in secret." Current statutory provisions in Title 24.2 require the presence of multiple officers of election and observers during the casting of votes and counting of ballots, which is meant to assure the public that the electoral process is fair and free from fraud and collusion. The question arises whether or not a personal computer, located in a voter's home and used to cast a vote via the Internet, violates the letter or the spirit or both of these constitutional and statutory provisions. On the other hand, Article II, Section 3 also

authorizes votes to be cast by absentee ballot "as provided by law," which bestows the General Assembly with fairly broad discretion regarding absentee voting.

Other practical and legal considerations include ensuring that the voter is eligible, is registered, votes only once, cannot prove how she voted (to prevent vote-buying), and maintains the right to cast a write-in vote; the ballot is cast in secret and is kept secret; and voting via the Internet is as convenient, accessible, simple, accurate, and reliable as the current voting process. Additional concerns raised about voting via the Internet include the need for alternative voting mechanisms in cases of equipment failure or system crashes, the ability to verify the electronic voting process or audit trail, the ability to secure equipment and material in cases of recounts or contested elections, and the true monetary savings to the Commonwealth if voting via the Internet is in addition to the current voting process.

B. VIDEOCONFERENCE/BROADCAST MEETING AND PILOT PROJECT

JCOTS' third meeting on October 22, 1997, was a videoconferenced meeting that linked five sites throughout the Commonwealth. Five JCOTS members (Delegates Plum, Lovelace, and May and Senators Howell and Ticer) were present at the meeting's primary site at the Alexandria campus of Northern Virginia Community College. Delegate Diamonstein and Senator Schrock participated from Old Dominion University in Norfolk, Senator Newman from Longwood College in Farmville, and Delegate Bennett from the Halifax County/South Boston Continuing Education Center of Longwood College in South Boston. The North Run location of J. Sargeant Reynolds Community College in Richmond also served as a meeting site. All sites were open to the public. About 65 people attended.

Denny Heck, president of TVW, was the main speaker. TVW, a nonprofit, public affairs network for Washington State, provides unedited coverage of state government deliberations and public policy events comparable to C-SPAN's. TVW's mission is to provide Washington's citizens with increased access to unbiased information about such deliberations and events through unedited television coverage. TVW is received in 2.5 million homes daily.

TVW's mission also includes a commitment to increase citizen access to state government deliberations and public policy events through relevant technologies other than television. In January 1996, with the governor's state of the state address, TVW became the first organization in the world to "broadcast" live audio of a public official over the Internet. On the world wide web, http://www.tvw.org now provides RealVideo and RealAudio archives and real-time transmission of over 3,500 hours of programming. Citizens with access to the Internet, a sound system, and free software (RealVideo or RealAudio) can listen to or watch oral argument of the Washington State Supreme Court; legislative committee and floor action; meetings of boards, commissions, and councils; press conferences; candidate debates; and other such deliberations and events. Mr. Heck estimated that TVW averages 500 "hits" a day on its website.

TVW is governed by a diverse 23-member board of directors. Programming is selected in accordance with guidelines adopted by the board to ensure balance, fairness, and a nonpartisan approach. TVW is a unique public-private partnership. In 1995, the Washington State

legislature provided 3.5 years of baseline operating support and made it available on an ongoing basis contingent upon continuing private sector matching requirements. These funds run through June of 1998.

Representatives from Net.Work.Virginia explained how the network provided the videoconference connection for the meeting. Net.Work.Virginia, the Commonwealth's first high-speed, broadband communications network delivering ATM (asynchronous transfer mode) service statewide, is the result of a project led by Virginia Tech in association with Old Dominion University and the Virginia Community College System to develop universal access to advanced digital communications services for all of Virginia. The network can carry thousands of simultaneous, two-way flows of voice, data, and video, and is based on Sprint's existing broadband fiber optic network in Virginia, with Bell Atlantic installing a new relay service technology that allows users to put voice, data, and video onto one communications line. Over 190 sites are connected to the network. Participants include four-year colleges and universities, the Virginia Community College System, private schools, several K-12 school systems, state agencies, and private industry. More information about Net.Work.Virginia can be found on the world wide web at http://www.networkvirginia.net.

Following on the success of the videoconferenced meeting, JCOTS has proposed a pilot project for 1998-1999 which partners JCOTS with Net.Work.Virginia, Virginia Public Television, and the Division of Legislative Automated Systems. Virginia's public television stations operate as non-profit regional public telecommunications centers to coordinate and manage a variety of educational and community-based services in Richmond, Annandale, Norfolk, Harrisonburg, and Roanoke. Additional transmitters and translators serve Charlottesville, Fredericksburg, Marion, Norton, and Winchester. The Division of Legislative Automated Systems is the state agency designated in Title 30 of the Virginia Code to provide--among other services--computing, programming, and legislative information services to the Virginia General Assembly.

The project's first objective is to allow JCOTS members to participate in videoconferenced meetings from within or near their home districts at public sites connected to Net.Work.Virginia, thus saving legislators' time and taxpayers' money. The second objective is to provide a mechanism to increase public awareness of and participation in JCOTS' work by broadcasting JCOTS' meetings to sites connected to Net.Work.Virginia (over 200 and growing) and as a 30-minute block of instructional school programming produced by Virginia Public Television. Currently, Virginia's public television stations, connected by microwave, contract with the Virginia Department of Education to provide instructional programs in 30-or 60-minute blocks to the stations' respective public school divisions five days a week during the academic year. A third objective is to broadcast meetings in real time over the Internet on JCOTS' website and to preserve the unedited meetings as RealVideo archives for later retrieval by citizens with access to the Internet, a sound system, and free software (RealVideo or RealAudio).

C. COMMISSION WEBPAGE

At its meeting on November 19, 1997, JCOTS approved posting draft reports and legislation on its webpage at http://legis.state.va.us/jcots/jcots.htm. (See Appendix 3.) JCOTS endorsed the

move to help solicit public comment on draft legislation before it is introduced for consideration by the Virginia General Assembly. Given its charge to promote the development of technology and science in Virginia, JCOTS is exploring new ways to use the Internet and other innovative technologies to increase public participation in and awareness of its work. By posting draft legislation on the Internet, JCOTS hopes to reach a potential global audience of individuals who might be willing to assist it produce a better work product.

Four buttons contain the main content of JCOTS' website: "Members and Staff," "Mailing Lists," "Meeting Information," and "Documents and Legislation." Draft reports and legislation are posted under the "Documents and Legislation" button. Advisory Committee Four (Digital Signatures) was the first advisory committee to post its draft report and legislation. Public comment on the documents was made via direct e-mail to JCOTS' staff.

Later in the fall of 1997, JCOTS' webpage was updated to include a "web server statistics" link. To do this, a program was run against the total number of "hits" to the Virginia General Assembly's web server (around 350,000 for the period from August 27 until December 17) to distill the number of "hits" to JCOTS' webpage. Another program, developed by a graduate student in computer science at Cambridge University in England and available free on the Internet, captured the statistics which comprise the report. The statistics indicated that for the 112 days covered by the report, JCOTS' webpage was "hit" over 8,000 times. The figure may be slightly overestimated because of the webpage's set-up in a "frames" software program; however, the statistics indicate that the Internet is helping to distribute information about JCOTS and its work quickly, efficiently, universally, and in a manner that reduces postage, mailing, and faxing costs. Updated statistical reports are run about every two weeks.

IV. CONCLUSION

The Joint Commission on Technology and Science extends sincere appreciation to everyone who participated in its work during 1997-1998 and supported its legislative recommendations during the 1998 Session of the General Assembly. We look forward to continuing our work in 1998-1999.

Respectfully submitted,

Delegate Kenneth R. Plum, Chair
Senator Patricia S. Ticer, Vice Chair
Delegate Alan A. Diamonstein
Delegate William W. Bennett, Jr.
Delegate George E. Lovelace
Delegate Joe T. May
Senator Janet D. Howell
Senator Stephen D. Newman
Senator Edward L. Schrock

APPENDIX 1.
1997-1998 Commission Workplan
(Adopted July 1, 1997)

I. Issues to Actively Study through Advisory Committees

1. Federal Telecommunications Act of 1996, Delegates Ted Bennett and George Lovelace, co-chairs
   A. Developments at federal level: Federal Communications Commission, National Exchange Carrier Association, pending lawsuits
   B. State Corporation Commission's study of telecommunications issues/ House Joint Resolution 635 (1997)*
   C. Library of Virginia's study of strategic information plan/House Joint Resolution 444 (1997)*
   D. Other Virginia state developments, e.g., Department of Education, Department of Health

2. Joint Legislative Audit and Review Commission's study of Virginia's data processing services**, Delegate Alan Diamonstein, chair

3. Joint Legislative Audit and Review Commission's study of Year 2000 Compatibility**, Delegate Joe May, chair

4. Council on Information Management's implementation of digital signatures/ Senate Bill 923 (1997)***, Senator Patsy Ticer, chair

5. Civil and criminal laws, Senator Ed Schrock, chair
   A. Distribute, collect, analyze law and technology surveys
   B. First Amendment issues on the Internet
      (i) U.S. Supreme Court decision in ACLU v. Reno
      (ii) Virginia college professors' lawsuit challenging state law restricting Internet access

6. Center for Innovative Technology's Blueprint for Technology-Based Economic Growth, Senators Janet Howell and Steve Newman, co-chairs
   A. CIT's study of technological assets/ Senate Joint Resolution 226 (1997)*
   B. State Council of Higher Education's study of workforce, technology skills/ Senate Joint Resolution 218 (1997)*

II. Issues to Introduce at Full Commission Meetings

1. Cyber-legislatures

2. Public records and access/ House Joint Resolution 416 (1997) studying Virginia's Freedom of Information Act

3. Taxing electronic trade and commerce

4. Council on Information Management's Geographic Information Network Division and Advisory Board/ House Bill 1597 (1997)

5. Genetic testing/ Senate Joint Resolution 248 (1997) studying genetic research

6. Alternative uses of tobacco

III. Miscellaneous Issues

1. Establish charge to advisory committees and solicit membership

2. Design Commission's logo for use on publications, letterhead, etc. (School contest?)

3. Design, establish, maintain Commission's website

4. Establish and maintain mailing list and contacts

5. Develop Commission's 1998-2000 and 1997 supplemental budget requests

6. Support 1998 World Congress on Information Technology at George Mason University, Fairfax, Virginia (June 21-24, 1998)

* Preliminary report due by 11/15/97 to Commission per joint resolution.
** Final report due by 1/1/98 per budget.
*** Final regulations due by 9/1/98 per SB 923.

APPENDIX 2.
1998 Commission Legislation

HB 275 (May) **Computer trespass.** Adds halting or otherwise disabling any computer data, computer programs, or computer software from a computer or computer network to the crime of computer trespass, and reduces the penalty from a Class 1 to a Class 3 misdemeanor. If such act is done recklessly and causes $2500 or more in damages, it is punishable as a Class 1 misdemeanor; if done maliciously, it is punishable as a Class 6 felony. The bill also preserves the ability to include terms or conditions in a contract or license relating to computers, data, networks, operations, programs, services, or software. Passed (Chapter 892, 1998 Acts).

HB 276 (Bennett) **Procurement; "Year 2000" remediation.** Encourages public bodies to strive to solicit goods and nonprofessional services of responsible bidders or offerors located in Virginia to remediate computer problems associated with the "Year 2000" date change. The bill expires January 1, 2001. Passed (Chapter 250, 1998 Acts).

HB 277 (May) **Virginia Tort Claims Act; "Year 2000" remediation errors.** Provides that civil actions may not be brought against the Commonwealth based upon the failure of a computer, software program, database, network, information system, firmware or any other device, whether operated by or on behalf of the Commonwealth of Virginia or one of its agencies, to interpret, produce, calculate, generate, or account for a date which is compatible with the "Year 2000" date change. Passed (Chapter 820, 1998 Acts).

HB 278 (Plum) **Certain electronic communication services; exemption from retail sales and use tax.** Exempts (i) charges for Internet access and related communications services and (ii) sales of software via the Internet from the retail sales and use tax. This measure codifies two recent decisions by the Tax Commissioner. Passed (Chapter 481, 1998 Acts).

HB 279 (DeBoer/JLARC) **Administration of government; information technology; chief information officer created.** Effective July 1, 1998, creates the Chief Information Officer (CIO) of the Commonwealth and the Department of Technology Services (DTS) and abolishes the Department of Information Technology (DIT) and the Council on Information Management (CIM). DIT employees will be transferred to DTS; CIM employees to the Office of the CIO. The CIO is appointed by the Governor and serves at his pleasure. In addition to DTS, the CIO would also assume responsibility for the Virginia Geographic Information Network Advisory Board and the Virginia Public Broadcasting Board (both of which are currently under the Secretary of Administration) and the Virginia Technology Infrastructure Fund (currently administered by CIM). The Virginia Geographic Information Network Division and Fund (currently a part of and administered by CIM) would be transferred to DTS. Carried over in House General Laws.

HJR 36 (Plum) **Resolution; sense of the Virginia General Assembly; Internet services should remain free from fees, taxes, etc.** Expresses the sense of the General Assembly that services which provide access to the international network of computer systems (commonly known as the Internet) and other related electronic communication services, as well as data

transmitted via such services, should remain free from fees, assessments, or taxes imposed by the Commonwealth and its political subdivisions. Passed.

HJR 37 (Plum) Designating "World Congress on Information Technology Week." Designates June 21-27, 1998, as "World Congress on Information Technology Week." Passed.

HJR 38 (Diamonstein) Legislative study; Uniform Commercial Code Revised Article 2B. Establishes a joint subcommittee to draft legislation for the 1999 Virginia General Assembly Session which considers and implements Uniform Commercial Code Revised Article 2B passed by the National Conference of Commissioners on Uniform State Laws and the American Law Institute. Passed by indefinitely in House Rules.

HJR 47 (Diamonstein) Recognizing the contributions of Sir Joseph John Thomson, O.M. Recognizes the contributions of Sir Joseph John Thomson, O.M., on the 100th anniversary of his discovery of electrons. Passed.

SB 152 (Ticer) Administration of government; electronic filing of information. Allows agencies responsible to the executive secretariats to (i) accept the electronic filing of any information required or permitted to be filed with such agencies and (ii) prescribe the methods of executing, recording, reproducing, and certifying such filing. The bill, which excludes the Virginia Public Procurement Act, is modeled after § 13.1-604 pertaining to the State Corporation Commission. Passed (Chapter 636, 1998 Acts).

SB 153 (Ticer) Electronic signatures. Repeals the second enactment of Chapter 917 of the 1997 Acts of Assembly, which provided that the Council on Information Management adopt final regulations on the use of digital signatures by September 1, 1998. The bill: (i) strikes CIM's authority to promulgate regulations to implement state agencies' and localities' use of digital signatures in favor of setting out criteria in the bill; (ii) changes the term "digital" to "electronic" to encompass signatures created by any electronic method; (iii) makes other necessary definitional changes; (iv) sets out criteria that a trier of fact must assess to determine the evidentiary weight to be given a particular electronic signature; and (v) sets out criteria that state agencies and localities must follow to use electronic signatures (which are the same criteria that a trier of fact must assess). Passed (Chapter 127, 1998 Acts).

SB 154 (Schrock) Absentee ballot applications. Requires the State Board of Elections to implement a system, beginning with the general election in November 1999, which enables persons to request, receive, and file absentee ballot applications electronically through the Internet. The bill also ensures that false statements made electronically are punishable the same as any other false statement made in connection with Virginia's election laws (as the crime of election fraud, a Class 5 felony). In a second enactment clause, the Board is requested to study the implementation of a system for registering voters and voting ballots (including absentee ballots) electronically through the Internet and report its findings and recommendations to the Governor and the 1999 Session of the General Assembly. Killed in Senate Privileges and Elections 4-9. (Parts of this bill were incorporated into House Bill 591 and House Joint Resolution 51, both of which passed.)

SB 155 (Newman) Virginia Freedom of Information Act; definitions; notice; electronic communication meetings. Amends FOIA to: (i) add a definition of "electronic communication means" by which meetings may be held; (ii) move the definition of "emergency" currently found in the electronic communication meeting section to FOIA's general definition section; (iii) require that, except in an emergency, notice of a meeting must be provided no less than three working days before the meeting in a manner reasonably calculated under the circumstances to apprise the public of the meeting information; (iv) maintain the current requirement that notice for emergency meetings be given contemporaneously with notice provided to members of the public body, but add that such notice be provided in a manner reasonably calculated under the circumstances to apprise the public of the meeting information; (v) maintain the current requirement that a quorum of the public body must be present to conduct a meeting, but delete the current requirement that the quorum must be physically present in one location in favor of requiring that, for purposes of establishing a quorum, every location where a member of the public body is physically present must be in Virginia and open and accessible to the public; (vi) after a quorum is established, permit members of the public body who are not physically present in Virginia or at a location open and accessible to the public to participate in the meeting, but prohibit such members from voting; (vii) delete the current requirement that a 30 days' notice of the electronic communication meeting be provided in favor of requiring the same notice as for all other public meetings (three days under the bill); (viii) require public bodies that hold electronic communication meetings to report annually thereon; (ix) remove the cap on electronic communication meetings (currently set at no more than 25 percent of all annual meetings); and (x) clearly state that it is a violation of FOIA for any public body or any member thereof to use electronic communications means to circumvent FOIA's spirit or letter. The bill retains the current prohibition on local public bodies' use of electronic communication means to hold meetings. Stricken from docket.

SB 156 (Newman) Virginia Freedom of Information Act; electronic communication meetings for certain public bodies. Provides an exemption from FOIA's restrictions on electronic communications meetings to (i) public bodies in the legislative branch of Virginia state government, (ii) state agencies under the control of the Secretary of Commerce and Trade and (iii) the Virginia Community College System. The bill clarifies that it does not apply to any session of the Virginia General Assembly. The bill adopts the basic requirements of nonelectronic communication public meetings as the required procedure for holding electronic communication meetings. The bill contains an emergency clause and expires on July 1, 1999. Vetoed by the Governor.

SJR 36 (Ticer) Study; Council on Information Management, etc.; Virginia Public Procurement Act; electronic contracting and procurement. Requests CIM; the Departments of Accounts, General Services, Motor Vehicles, and Transportation; the State Corporation Commission; the Attorney General; the University of Virginia; Virginia Tech; the Virginia Association of Counties; and the Virginia Municipal League to jointly study methods of electronic contracting and procurement under the VPPA, along with any other interested parties or individuals. Passed.

SJR 37 (Newman) Study; Center for Innovative Technology; technological and scientific assets. Requests CIT to develop statewide strategies regarding certain technological and scientific research and development assets. Passed.

SJR 38 (Howell) Study; Secretaries of Commerce and Trade and Education; statewide strategy to increase technologically-skilled workers. Requests the Secretaries to jointly develop a statewide strategy to increase the number of computer scientists, engineers, and other technologically skilled workers in Virginia by 2002. Passed.

SJR 39 (Howell) Study; Center for Innovative Technology; university-affiliated research parks. Requests CIT to study university-affiliated research parks. Left in Senate Rules.

APPENDIX 3.
Commission Webpage

http://legis.state.va.us/jcots/jcots.htm

JCOTS

Members & Staff

Mailing Lists

Meeting Information

Documents & Legislation

General Assembly

Joint Commission on Technology and Science

Created by the 1997 Virginia General Assembly through House Bill 2138 as a permanent legislative commission charged to generally study all aspects of technology and science and to promote the development of technology and science in the Commonwealth of Virginia through sound public policies (Chapter 11 (§30-85 et seq.) of Title 30 of the Code of Virginia).

The Joint Commission consists of 9 legislators from the Virginia General Assembly (5 Delegates and 4 Senators).

Would you like to be added to the Commission's mailing list?

Please forward comments, questions and suggestions to:

Joint Commission on Technology and Science
910 Capitol Street, 2nd Floor
General Assembly Bldg.
Richmond, VA 23219
Phone (804) 786-3591
Fax (804) 371-0169

Web server statistics through April 3, 1998.

APPENDIX 4.
1998 Legislation With Technology or Science Content
(By Alphabetical Subject Matter)

Legislation recommended by the Joint Commission on Technology and Science is **bolded.**
Passed legislation is *italicized*.

	HBs	HJRs	SBs	SJRs	Totals
Introduced	57	15	26	6	104
Passed	32	12	11	4	59
Failed	25	3	15	2	45

Civil Law (8)

HB 264 *Trademarks.*
HB 277 ***Virginia Tort Claims Act; "Year 2000" remediation errors.***
HB 941 *Trade and commerce; Virginia Assistive Technology Device Warranties Act created.*
HB 1325 Personal Privacy Information Act; sale or release of certain electronic information prohibited; damages.
HB 1402 Trade and commerce; information infrastructure providers; restrictions on use of services; penalty.
HJR 38 **Legislative study; Uniform Commercial Code Revised Article 2B.**
SB 297 Labor and employment; electronic payment of wages and salaries.
SB 402 *Trade and Commerce; Virginia Assistive Technology Device Warranties Act created.*

Criminal Law (13)

HB 201 Reporting of sexually explicit visual material involving a minor and appearing on World Wide Web.
HB 202 Taking indecent liberties with children; criminal solicitation of children.
HB 275 ***Computer trespass.***
HB 651 *Electronic threats communicated to people.*
HB 748 Unlawful e-mail.
HB 1129 Good time credit; offenders assigned to home/electronic incarceration.
HB 1350 Department of Social Services; public assistance fraud; finger imaging.
HB 1382 Home/electronic incarceration of a juvenile.
SB 199 *Offenses involving telecommunications devices.*
SB 227 Computer invasion of privacy.
SB 380 Independent testing of DNA evidence.
SB 426 *Threats.*
SB 459 Department of Social Services; public assistance fraud; finger imaging.

Economic Development (9)

HB 278 ***Certain electronic communication services; exemption from retail sales and use tax.***
HB 1026 Solar Photovoltaic Manufacturing Incentive Grant Program.

HB 1186	Center for Innovative Technology; Technology Growth Fund created.
HJR 36	***Resolution; sense of the Virginia General Assembly; Internet services should remain free from fees, taxes, etc.***
HJR 37	***Designating "World Congress on Information Technology Week."***
HJR 47	***Recognizing the contributions of Sir Joseph John Thomson, O.M.***
SJR 37	***Study; Center for Innovative Technology; technological and scientific assets.***
SJR 39	**Study; Center for Innovative Technology; university-affiliated research parks.**
SJR 228	*Designating "Technology Month."*

Education and Workforce Training (14)

HB 431	*Excellence in public schools.*
HB 432	*Training and professional development of teachers, administrators, and superintendents.*
HB 433	Business and education partnerships.
HB 849	*Workforce training at community colleges.*
HB 1006	Bachelor degree requirements.
HB 1200	*Standards of Quality; technological proficiency.*
HB 1308	Virginia Technology Training Act.
HJR 124	*Study; State Board for Community Colleges and Board of Education; technology centers.*
HJR 176	*Study; Department of Education; guidelines for technology connectivity.*
SB 165	Excellence in public schools.
SB 166	Training and professional development of teachers, administrators, and superintendents.
SB 168	Business and education partnerships.
SB 384	*Workforce training at community colleges.*
SJR 38	***Study; Secretaries of Commerce and Trade and Education; statewide strategy to increase technologically-skilled workers.***

Internet Access for Schools and Libraries (3)

HB 348	Public libraries; information infrastructure access; penalties.
HB 1043	Public schools and libraries; Virginia Information Access Act of 1998 created.
HB 1317	School-based access to information infrastructure.

Telecommunications (12)

HB 323	Retail sales and use tax; telecommunications exemptions.
HB 335	*Organization of local government; telecommunications infrastructure.*
HB 553	*License and franchise taxes; telephone and telegraph companies.*
HB 568	*Local planning commissions; approval of telecommunications facilities.*
HB 957	*Public rights-of-way; mileage-based fees; costs of relocating telecommunication facilities in public rights-of-way.*
HB 1079	*Open video systems.*
HB 1237	*Local governments; telecommunications facilities.*
HB 1331	*Wireless Enhanced Public Safety Telephone Service Act created.*
SB 480	*Placement of amateur radio antennas.*
SB 541	Local E-911 tax exemption for telephone lines dedicated to Internet access or other data transmission through a modem.

SB 577 *Public rights-of-way; mileage based fees; costs of relocating telecommunication facilities in public rights-of-way.*
SB 578 *Open video systems.*

Transportation (10)

HB 445 *Radar jamming devices prohibited.*
HB 735 *Laser speed detection devices; Prince William County.*
HB 763 Photo radar enforcement of school crossing speed limits.
HB 1018 Photo red enforcement; James City County.
HB 1122 Photo red enforcement; Hampton City.
HB 1397 Photo red enforcement; Town of Warrenton.
HJR 228 *Requesting transportation planning agencies to incorporate technology in the planning process.*
HJR 234 *Requesting Virginia Department of Transportation to establish survey benchmarks.*
SB 101 Laser speed measurement devices; Northern Virginia, Roanoke County, and Roanoke City.
SB 588 *Photo-enforcement of toll payments.*

Virginia State Government (35)

HB 276 ***Procurement; "Year 2000" remediation.***
HB 279 **Administration of government; information technology; chief information officer created.**
HB 580 *Election information on the Internet.*
HB 588 *Campaign finance disclosure reports; electronic filings; Internet access.*
HB 591 *Persons entitled to vote absentee and absentee ballot applications.*
HB 632 *Virginia Information Providers Network Authority; restrictions on release of information.*
HB 659 *Virginia Freedom of Information Act; meetings of board of visitors of the University of Virginia.*
HB 703 *Virginia Information Providers Network Authority; resource site for student employment and internship opportunities.*
HB 790 *Commissioners of revenue and treasurers; remote access to public records.*
HB 792 *Electronic access to certain court records.*
HB 793 *Cover sheets on deeds or other instruments by certain circuit court clerks.*
HB 794 *Electronic filing system; circuit court clerks; sunset.*
HB 998 Virginia Freedom of Information Act; meetings of Commercial Space Flight Authority.
HB 1009 *Division of Purchases and Supply; procurement of computer equipment.*
HB 1012 Virginia Information Providers Network Authority; certain DMV records exempted.
HB 1115 Information Technology Access Act created for individuals who are blind or visually impaired.
HB 1141 *Task Force on Land Records Management continued.*
HJR 25 *Study; Clerks of the Virginia House of Delegates and Senate; constituent services.*
HJR 51 *Study; Joint Legislative Audit and Review Commission; Virginia voter registration system and elections offices.*

HJR 113	*Department of Mental Health, Mental Retardation and Substance Abuse Services; implementation of managed care technologies.*
HJR 155	*Study; Judicial Council; recordings of court proceedings.*
HJR 171	Study; Judicial Council; "quick court" kiosks.
HJR 231	Legislative study; Internet filing of tax returns.
HJR 253	*Resolution; sense of the Virginia General Assembly; Governor should support work of the United States Innovation Partnership.*
SB 152	***Administration of government; electronic filing of information.***
SB 153	***Electronic signatures.***
SB 154	**Absentee ballot applications.**
SB 155	**Virginia Freedom of Information Act; definitions; notice; electronic communication meetings.**
SB 156	**Virginia Freedom of Information Act; electronic communication meetings for certain public bodies.**
SB 252	*Virginia Freedom of Information Act; meetings of board of visitors of the University of Virginia.*
SB 580	Information Technology Access Act created for individuals who are blind or visually impaired.
SB 589	Department of Environmental Quality; posting polluting malfunctions on Internet.
SB 689	Council on Information Management; coordinate statewide human services information and referral system.
SJR 36	***Study; Council on Information Management, etc.; Virginia Public Procurement Act; electronic contracting and procurement.***
SJR 175	Resolution; sense of the Virginia General Assembly; television coverage of legislative sessions.

APPENDIX 5.
Summaries of 1998 Legislation With Technology or Science Content
(In Numerical Order by HBs, HJRs, SBs, and SJRs)

BILL NUMBER: House Bill 201--No action taken in House Courts.
PATRON: Marshall
SUMMARY: ***Reporting of sexually explicit visual material involving a minor and appearing on the World Wide Web.*** Requires that a person who has reason to suspect that sexually explicit visual material which has as its subject a person less than 18 years of age and which appears on, is transmitted by or through, or can be accessed, reproduced or downloaded via a commercial computer system or service maintained or offered by the person report the matter within 24 hours to the State Police. Failure to report results is a fine of no more than $500 for the first offense and no more than $1000 nor less than $100 for the second or subsequent offense.

BILL NUMBER: House Bill 202--No action taken in House Courts.
PATRON: Marshall
SUMMARY: ***Taking indecent liberties with children; criminal solicitation of children.*** Increases from a Class 6 felony to a Class 5 felony any act deemed an indecent liberty with a child if such act is accomplished by use of a computer and raises the penalty for criminal solicitation of a minor from a Class 5 to a Class 4 felony if committed by use of a computer.

BILL NUMBER: House Bill 264--Passed (Chapter 819, 1998 Acts).
PATRON: Clement
SUMMARY: ***Trademarks.*** Provides a state system of trademark registration. This bill replaces the current Virginia laws on trademarks, service marks, and case marks with the Model State Trademark Bill, which has been adopted in 46 states. This bill contains the requirements for (i) determining registrability of trademarks, (ii) applying, filing, and issuing a certificate of registration, (iii) renewing a trademark, (iv) assigning a trademark or changing the name of the person for whom the application was filed, (v) recordkeeping and (vi) canceling a registration. All of these functions are performed under the supervision and direction of the State Corporation Commission. The bill requires the SCC to establish by regulation a classification of goods and services; provides procedures and remedies for handling fraudulent registration, trademark infringement, and business reputation injury; and retains the Class 2 misdemeanor and Class 6 felony penalties for first and subsequent violations of the trademark infringement provision. The bill also prohibits the infringement of trademarks, tradenames, etc., associated with symbols of the United States and International Olympic Committees.

BILL NUMBER: House Bill 275--Passed (Chapter 892, 1998 Acts). JCOTS recommendation.

PATRON: May

SUMMARY: ***Computer trespass.*** Adds halting or otherwise disabling any computer data, computer programs, or computer software from a computer or computer network to the crime of computer trespass, and reduces the penalty from a Class 1 to a Class 3 misdemeanor. If such act is done recklessly and causes $2500 or more in damages, it is punishable as a Class 1 misdemeanor; if done maliciously, it is punishable as a Class 6 felony. The bill also preserves the ability to include terms or conditions in a contract or license relating to computers, data, networks, operations, programs, services, or software.

BILL NUMBER: House Bill 276--Passed (Chapter 250, 1998 Acts). JCOTS recommendation.

PATRON: Bennett

SUMMARY: ***Procurement; "Year 2000" remediation.*** Encourages public bodies to strive to solicit goods and nonprofessional services of responsible bidders or offerors located in Virginia to remediate computer problems associated with the "Year 2000" date change. The bill expires January 1, 2001.

BILL NUMBER: House Bill 277--Passed (Chapter 820, 1998 Acts). JCOTS recommendation.

PATRON: May

SUMMARY: ***Virginia Tort Claims Act; "Year 2000" remediation errors.*** Provides that civil actions may not be brought against the Commonwealth based upon the failure of a computer, software program, database, network, information system, firmware or any other device, whether operated by or on behalf of the Commonwealth of Virginia or one of its agencies, to interpret, produce, calculate, generate, or account for a date which is compatible with the "Year 2000" date change.

BILL NUMBER: House Bill 278--Passed (Chapter 481, 1998 Acts). JCOTS recommendation.

PATRON: Plum

SUMMARY: ***Certain electronic communication services; exemption from retail sales and use tax.*** Exempts (i) charges for Internet access and related communications services and (ii) sales of software via the Internet from the retail sales and use tax. This measure codifies two recent decisions by the Tax Commissioner.

BILL NUMBER: House Bill 279--Carried over in House General Laws. JCOTS recommendation.

PATRON: DeBoer

SUMMARY: ***Administration of government; information technology; chief information officer created.*** Effective July 1, 1998, creates the Chief

Information Officer (CIO) of the Commonwealth and the Department of Technology Services (DTS) and abolishes the Department of Information Technology (DIT) and the Council on Information Management (CIM). DIT employees will be transferred to DTS; CIM employees to the Office of the CIO. The CIO is appointed by the Governor and serves at his pleasure. In addition to DTS, the CIO would also assume responsibility for the Virginia Geographic Information Network Advisory Board and the Virginia Public Broadcasting Board (both of which are currently under the Secretary of Administration) and the Virginia Technology Infrastructure Fund (currently administered by CIM). The Virginia Geographic Information Network Division and Fund (currently a part of and administered by CIM) would be transferred to DTS.

BILL NUMBER: House Bill 323--Carried over in Senate Finance.
PATRON: Cranwell
SUMMARY: ***Retail sales and use tax; telecommunications exemptions.*** Expands the sales tax exemption for telecommunications companies to cover all tangible personal property used in the conduct of its telecommunications business, except office equipment, office furniture or motor vehicles. Currently, the exemption applies only to tangible personal property used directly in the rendition of the public service.

BILL NUMBER: House Bill 335--Passed (Chapter 906, 1998 Acts).
PATRON: Callahan
SUMMARY: ***Organization of local government; telecommunications infrastructure.*** Clarifies the existing law which gives localities authority to organize its departments by expanding such authority to offices, boards, commissions, and agencies and the organizational structure thereof. The bill also provides that, notwithstanding any other provision of law, general or special, no locality shall establish any governmental entity which has authority to offer telecommunications equipment, infrastructure or services. Exceptions are provided for certain intragovernmental uses and for the Town of Abingdon (described by proximity to Interstate 81.) Localities are permitted to sell their existing telecommunications infrastructure and equipment. The bill expires July 1, 2000.

BILL NUMBER: House Bill 348--Carried over in House Courts.
PATRON: Marshall
SUMMARY: ***Public libraries; information infrastructure access; penalties.*** Places limitations on public library patron access to the Internet and other components of the electronic information infrastructure. The bill is not applicable to libraries in public or private elementary or secondary schools. The bill requires juveniles to be accompanied by (i) parents or guardians, or (ii) a responsible adult, teacher or librarian with the express permission of such juveniles' parents or guardians, when using public

library computers furnishing unrestricted access to the information infrastructure. Additionally, library computers with such unrestricted access must be placed in restricted library areas physically separate from areas in which juveniles are permitted unaccompanied by adults. The bill further stipulates that libraries with computers furnishing unrestricted information infrastructure access must also provide juveniles access to separate computers providing information infrastructure access, but limiting that access to resources and sites free (to extent technically feasible) from materials harmful to juveniles, child pornography, and obscene materials. The bill also prohibits the access, display or reproduction by library patrons, via the information infrastructure, of materials harmful to juveniles, obscene materials or child pornography in any library area from which juveniles are not excluded. Additionally, library patrons are prohibited from accessing, displaying or reproducing obscene materials or child pornography via the information infrastructure in any library area. Violations of these provisions are punishable as (i) Class 1 misdemeanors if the materials obtained are materials harmful to juveniles or obscene materials, or (ii) Class 5 felonies if the materials obtained constitute child pornography. Public libraries receiving any state funding are required by this bill to obtain computer hardware and software inhibiting library patron access via library computers to obscene materials and child pornography. All public libraries are required to develop guidelines designed to prevent potential sexual harassment of library employees via a hostile workplace created by library patron access, display or reproduction of sexually explicit materials on library premises. Public libraries are also required by this bill to develop and implement guidelines for library patron information infrastructure access via library computers designed to (i) inhibit library patron access to obscene materials and child pornography, (ii) ensure patron compliance with the provisions of this bill, and (iii) ensure prompt reporting to law-enforcement authorities of patron violations of this bill's criminal provisions. The guidelines must be implemented not later than January 1, 1999, for existing libraries, and within six months of their establishment for any new library facilities opened thereafter. Finally, the bill provides civil and criminal immunity to library staff furnishing information about library patron violations of this provisions of this act, when such reports are made in good faith and upon reasonable belief.

BILL NUMBER: House Bill 431--Passed (Chapter 902, 1998 Acts).

PATRON: Bennett

SUMMARY: ***Excellence in public schools.*** Amends various education statutes to implement certain recommendations of the Commission on the Future of Public Education (HJR 196 of 1996). Among other changes, the educational opportunity programs law is revised to require the Board of Education to "strive" to incorporate technological studies within the

teaching of all disciplines and to require, consistent with school board policies designed to improve school-community communications and guidelines for providing instructional assistance in the home, each school division to "strive" to establish a voice mail communication system after regular school hours for parents, families, and teachers by 2000.

BILL NUMBER: House Bill 432--Passed (Chapter 826, 1998 Acts).
PATRON: Bennett
SUMMARY: ***Training and professional development of teachers, administrators, and superintendents.*** Establishes a number of initiatives supporting professional training and development among public school personnel to implement various recommendations of the Commission on the Future of Public Education (HJR 196 of 1996). Among other changes, the mentor teacher statute is revised to require the Board of Education to establish guidelines for training programs to support the Standards of Learning, including training in English, mathematics, science, technological studies, history, and social sciences to provide support for teachers in public elementary and secondary schools and the development of leadership skills for principals, superintendents, and other administrative personnel. Local school boards are required to implement programs consistent with these guidelines from such funds as may be appropriated for this purpose.

BILL NUMBER: House Bill 433--Stricken from docket.
PATRON: Bennett
SUMMARY: ***Business and education partnerships.*** Establishes the Business and Education Grants Program and Fund, to be administered by the Board of Education, to support 16 matching grants to be awarded annually on a competitive basis to school divisions, with two grants for each superintendent's region, to support innovative partnerships between school divisions and local business and industry. The bill also requires local school boards to establish local business advisory councils and creates a 12-member Advisory Council on Business and Education.

BILL NUMBER: House Bill 445--Passed (Chapter 300, 1998 Acts).
PATRON: Almand
SUMMARY: ***Radar jamming devices prohibited.*** Makes use of radar jammers illegal.

BILL NUMBER: House Bill 553--Passed (Chapter 897, 1998 Acts).
PATRON: DeBoer
SUMMARY: ***License and franchise taxes; telephone and telegraph companies.*** Revises the definition of gross receipts for purposes of the minimum tax and the special tax by deleting the deduction for the first $500,000 of billing and collecting revenue. Revenues received from a telephone company from (i) unbundled network facilities; (ii) completion, origination or interconnection of telephone calls with taxpayer's network;

(iii) transport of phone calls over taxpayer's network; and (iv) taxpayer's phone services for resale will be included in the company's taxable gross receipts. The bill clarifies that the State Corporation Commission will eventually assess voice services such as cellular and broadband. These provisions become effective for tax years beginning on or after January 1, 1999.

BILL NUMBER: House Bill 568--Passed (Chapter 683, 1998 Acts).
PATRON: Keating
SUMMARY: ***Local planning commissions; approval of telecommunications facilities.*** Requires local planning commissions' determinations concerning proposed telecommunications facilities to comply with the requirements of the Federal Telecommunications Act of 1996. The bill further stipulates that a telecommunications facility application shall be deemed approved if a commission fails to act on it within 90 days of its submission unless the governing body or the applicant has authorized an extension of time. A governing body may not grant an extension that is longer than 60 days. If the commission has not acted on the application by the end of the extension, the application is deemed approved.

BILL NUMBER: House Bill 580--Passed (Chapter 478, 1998 Acts).
PATRON: Moran
SUMMARY: ***Election information on the Internet.*** Requires the State Board of Elections to furnish lists of candidates and information on constitutional amendments and statewide referenda on the Internet for all elections in the Commonwealth beginning with the November 1998 general election.

BILL NUMBER: House Bill 588--Passed (Chapter 416, 1998 Acts).
PATRON: Albo
SUMMARY: ***Campaign finance disclosure reports; electronic filings; Internet access.*** Requires candidates for Governor, Lieutenant Governor, and Attorney General, beginning January 1, 1999, to file information on campaign contributions and expenditures by computer or electronic means meeting State Board of Election standards, and permits General Assembly candidates to file by computer electronically. The bill provides for the availability to the public of information from these campaign finance filings and reports through the Internet and requires the State Board to make all information from these reports (whether or not filed electronically) available on the Internet beginning January 1, 2001.

BILL NUMBER: House Bill 591--Passed (Chapter 254, 1998 Acts).
PATRON: Cantor
SUMMARY: ***Persons entitled to vote absentee and absentee ballot applications.*** Provides that a person who is unable to go to the polls on election day because of an obligation occasioned by his religion shall be entitled to

vote absentee. The person does not have to be absent from his locality on election day in order to vote absentee under this provision. The bill also requires the State Board of Elections to make absentee ballot applications available through the Internet beginning with the November 1999 election. (This provision was incorporated into the bill from Senate Bill 154, a JCOTS recommendation which was killed.)

BILL NUMBER: House Bill 632--Passed (Chapter 715, 1998 Acts).
PATRON: Rollison
SUMMARY: ***Virginia Information Providers Network Authority; restrictions on release of information.*** Requires the VIPNET Authority to ensure in its agreements that personal privacy of individuals is protected by not allowing the aggregation of information to reveal the identity of individuals.

BILL NUMBER: House Bill 651--Passed (Chapter 687, 1998 Acts).
PATRON: Bryant
SUMMARY: ***Electronic threats communicated to people.*** Provides that if any person writes, composes, or sends any form of electronic communication producing a visual or electronic message, containing a threat to kill or do bodily injury to a person, he shall be guilty of a Class 6 felony. The law formerly only included written communication. Now an e-mail message will be included.

BILL NUMBER: House Bill 659--Passed (Chapter 839, 1998 Acts).
PATRON: Diamonstein
SUMMARY: ***Virginia Freedom of Information Act; meetings of board of visitors of the University of Virginia.*** Provides that UVA's board of visitors may conduct meetings through audio/video communication when at least two-thirds of the membership is physically assembled at its regular meeting place and when the customary requirements of public notice, voting, and recordation of the meetings are followed. The bill limits such meetings to 25 percent of all meetings held by the board. The bill expires July 1, 2000.

BILL NUMBER: House Bill 703--Passed (Chapter 842, 1998 Acts).
PATRON: May
SUMMARY: ***Virginia Information Providers Network Authority; resource site for student employment and internship opportunities.*** Requires the VIPNET Authority to establish and maintain an Internet-based resource site to assist students and employers in exchanging information about internship and employment opportunities.

BILL NUMBER: House Bill 735--Passed (Chapter 423, 1998 Acts).
PATRON: McQuigg
SUMMARY: ***Laser speed detection devices; Prince William County.*** Allows Prince William County to use laser speed detection devices.

BILL NUMBER: House Bill 748--Carried over in House Science and Technology.
PATRON: Marshall
SUMMARY: ***Unlawful e-mail.*** Creates a Class 1 misdemeanor to punish the person who sends, for commercial purposes, an e-mail message containing material which is harmful to juveniles and may be examined by a juvenile.

BILL NUMBER: House Bill 763--Carried over in House Transportation.
PATRON: Devolites
SUMMARY: ***Photo radar enforcement of school crossing speed limits.*** Establishes a pilot program of photo radar enforcement of school crossing speed limits similar to that for photo enforcement of traffic light signals. The pilot program expires after five years (July 1, 2003).

BILL NUMBER: House Bill 790--Passed (Chapter 235, 1998 Acts).
PATRON: Phillips
SUMMARY: ***Commissioners of revenue and treasurers; remote access to public records.*** Authorizes commissioners of revenue and treasurers to provide remote access, by means such as the Internet, to public, nonconfidential records maintained by their offices.

BILL NUMBER: House Bill 792--Passed (Chapter 650, 1998 Acts).
PATRON: Phillips
SUMMARY: ***Electronic access to certain court records.*** Allows, instead of mandates, the clerk to charge a fee for electronic access to nonconfidential court records. The fee, if any, is to be established by the clerk or, as under current law, the local government agency that is providing computer support for such access. The fee is limited to an amount to cover the operational costs of providing access (e.g., maintenance, support, enhancements of the system used to provide access). The fee, if charged, is to be charged each user and paid into a special local nonreverting fund to be used for operating the system.

BILL NUMBER: House Bill 793--Passed (Chapter 378, 1998 Acts).
PATRON: Phillips
SUMMARY: ***Cover sheets on deeds or other instruments by certain circuit court clerks.*** Allows the circuit court clerk of Wise County and the City of Norton to request that a cover sheet be filled out on all real estate documents which provides pertinent information to the clerk for indexing purposes.

BILL NUMBER: House Bill 794--Passed (Chapter 651, 1998 Acts).
PATRON: Phillips
SUMMARY: ***Electronic filing system; circuit court clerks; sunset.*** Allows any circuit court clerk to establish a system for electronic filing of documents after submitting an implementation plan to the Council of Information Management; the clerk may use a system authorized by the Supreme Court. The Supreme Court may by rule allow for the electronic filing of any papers in civil or criminal actions. The bill also extends the sunset on these provisions of the Code from July 1, 1998 to July 1, 2004.

BILL NUMBER: House Bill 849--Passed (Chapter 111, 1998 Acts).
PATRON: Diamonstein
SUMMARY: ***Workforce training at community colleges.*** Modifies the definition of "comprehensive community college" to include the provision of noncredit training and retraining courses and programs of varying lengths to meet the needs of business and industry in the Commonwealth and designates the Virginia Community College System as the state agency with primary responsibility for coordinating workforce training at the postsecondary to the associate degree level, excluding vocational and technical education provided through the public schools. The VCCS's responsibility for coordinating workforce training will not preclude other agencies from also providing such services as appropriate; however, these activities will be coordinated with the community colleges. The bill is a recommendation of the HJR 622 Joint Subcommittee to Study Noncredit Education for Workforce Training in Virginia.

BILL NUMBER: House Bill 941--Passed (Chapter 242, 1998 Acts).
PATRON: Plum
SUMMARY: ***Trade and Commerce; Virginia Assistive Technology Device Warranties Act created.*** Creates a "lemon law" for assistive technology devices. Assistive technology devices are mechanical devices and instruments used by disabled individuals to communicate, see, hear or maneuver, e.g., manual wheelchairs, motorized scooters, hearing aids and communications devices for the deaf, talking software, and Braille printers. The bill's key provisions stipulate that in addition to any express manufacturers' warranties otherwise provided, manufacturers of assistive technology devices impliedly warrant, for a period of at least one year following delivery to consumers, that their products are free of defects substantially impairing their value. During this one-year warranty period, consumers may obtain repairs of their assistive technology devices from manufacturers at no charge. If, within the 12-month period following delivery, the devices are (i) subject to repair for the same or related problem three times or (ii) not practically usable for a cumulative total of 30 days with no comparable loaner available, the devices must be replaced within 30 days, or the purchaser refunded his full purchase price (plus

collateral costs) within 14 days. The bill prohibits the sale or lease of any device previously returned unless the reason for its return is disclosed to its prospective customer or lessee. A consumer's remedies are not limited to the Act's provisions; he may seek civil relief as well. Consumers are also furnished the option of submitting disputes arising under this act to the Dispute Resolution Unit of the Office of Consumer Affairs. A nearly identical version of this bill was approved by the 1997 Session of the General Assembly, with the proviso that its provisions would not become effective unless reenacted by the 1998 Session of the General Assembly.

BILL NUMBER: House Bill 957--Passed (Chapter 758, 1998 Acts).

PATRON: Robinson

SUMMARY: ***Public rights-of-way; mileage-based fees; costs of relocating telecommunication facilities in public rights-of-way.*** Establishes the Public Rights-of-Way Use Fee to be used for the collection of fees from certificated providers of local exchange telecommunications service for the use of public rights-of-way. This fee will replace any and all fees of general application for use of public rights-of-way for localities whose public streets and roads are maintained by the Virginia Department of Transportation. Localities that maintain their own roads may impose the fee by ordinance. Localities imposing the fee and the Commonwealth Transportation Board will collect, in an equal amount each month, an annual amount calculated by charging an established amount for (i) number of miles of public highway and (ii) number of feet of new installations installed in existing public rights-of-way. The fee is determined by dividing the sum of the total amount from highway mileage and new installations by the total number of access lines in participating localities. The amount is included, as a separate item, on each consumer's monthly local exchange billing statement in an amount of no less than 50 cents per access line. The certificated provider of local exchange service will remit the amount collected directly back to localities that maintain their own public streets and roads and that impose the fee by ordinance. In localities whose roads are maintained by VDOT, the fees shall be remitted to VDOT and then apportioned back to such localities on a population basis. Cities or towns electing not to impose the fee by ordinance may not impose on certificated providers of local exchange service restrictions on the use of the rights-of-way that (i) are unfair or unrecoverable or (ii) are any greater than those imposed on other nonpublic providers of public services. The bill also establishes a schedule for the reimbursement to telecommunications service providers for expenses related to the relocation of existing facilities when the expense is incurred at the direction of the locality or the VDOT. The provisions of this bill are not applicable to Henrico County.

BILL NUMBER: House Bill 998--Stricken from docket.
PATRON: Bloxom
SUMMARY: ***Virginia Freedom of Information Act; meetings of Commercial Space Flight Authority.*** Provides an exemption from FOIA's notice requirements for electronic communication meetings of the Authority's board of directors. The bill specifies that the board will still be required to comply with the requirements for minutes, recordation, and preservation of the audio or audio/visual recording of any such meeting.

BILL NUMBER: House Bill 1006--Killed in House Education 3-20.
PATRON: Albo
SUMMARY: ***Bachelor degree requirements.*** Clarifies the power of boards of visitors of Virginia's public institutions of higher education to confer degrees and set graduation requirements, and requires these boards to include in the requirements for a bachelor's degree the satisfactory completion of at least three credit hours in computer science or proficiency.

BILL NUMBER: House Bill 1009--Passed (Chapter 536, 1998 Acts).
PATRON: Albo
SUMMARY: ***Division of Purchases and Supply; procurement of computer equipment.*** Provides that performance-based specifications shall include, but are not limited to, certain vendor and equipment characteristics.

BILL NUMBER: House Bill 1012--Carried over in House Transportation.
PATRON: Rollison
SUMMARY: ***Virginia Information Providers Network Authority; certain DMV records exempted.*** Exempts certain information in DMV records from release to or through the VIPNET Authority.

BILL NUMBER: House Bill 1018--Carried over in House Transportation.
PATRON: Grayson
SUMMARY: ***Photo red enforcement; James City County.*** Adds James City County (by population) to the list of localities authorized to have a pilot program using photo-monitoring equipment to enforce traffic light signals.

BILL NUMBER: House Bill 1026--Carried over in Senate Agriculture.
PATRON: Grayson
SUMMARY: ***Solar Photovoltaic Manufacturing Incentive Grant Program.*** Extends the program until December 31, 2003. Currently, the program is set to end on December 31, 2001.

BILL NUMBER: House Bill 1043--Carried over in House Science and Technology.
PATRON: Jackson
SUMMARY: ***Public schools and libraries; Virginia Information Access Act of 1998 created.*** Based upon a stated legislative finding that information access through computer hardware, software programs, etc., which are supported

in whole or in part by the general funds of the Commonwealth, is a privilege and not a right, creates the Board for Information Access, to develop, design, deploy, maintain, and update information access for (i) students in the Commonwealth's public elementary and secondary schools who are under the age of 18 and (ii) patrons of the Commonwealth's public libraries who are under the age of 18. The 26-member Board would consist of the nine-member Board of Education, the Superintendent of Public Instruction, the 15-member Library Board, and the State Librarian.

BILL NUMBER: House Bill 1079--Passed (Chapter 652, 1998 Acts).
PATRON: Hull
SUMMARY: ***Open video systems.*** Allows localities to regulate an open video system to the maximum extent permitted by federal law.

BILL NUMBER: House Bill 1115--Carried over in House Science and Technology.
PATRON: Darner
SUMMARY: ***Information Technology Access Act created for individuals who are blind or visually impaired.*** Creates the Information Technology Access Act to secure the benefits of access to information technology for individuals who are blind or visually impaired through the procurement of such technology in accordance with standards for equivalent access by both visual and nonvisual means.

BILL NUMBER: House Bill 1122--Carried over in House Transportation.
PATRON: Behm
SUMMARY: ***Photo red enforcement; Hampton City.*** Adds Hampton City (by population) to the list of localities that may establish photo enforcement of traffic light signals programs.

BILL NUMBER: House Bill 1129--House failed to appoint second conference committee.
PATRON: Davies
SUMMARY: ***Good time credit; offenders assigned to home/electronic incarceration.*** Allows good time credit to be awarded to criminal offenders assigned to home/electronic incarceration programs.

BILL NUMBER: House Bill 1141--Passed (Chapter 14, 1998 Acts).
PATRON: Phillips
SUMMARY: ***Task Force on Land Records Management continued.*** Continues the Task Force on Land Records Management through June 30, 1999, for the purpose of implementing the strategic and tactical plans consistent with the Final Report of the Task Force issued January 1, 1998. The membership shall remain the same. The bill also extends the sunset applicable to the Task Force to July 1, 2000, and contains an emergency clause.

BILL NUMBER: House Bill 1186--Stricken from docket.
PATRON: O'Brien
SUMMARY: ***Center for Innovative Technology; Technology Growth Fund created.*** Creates the Technology Growth Fund, to be administered by the board of the Innovative Technology Authority, to maintain, expand, and attract research and development facilities and contracts from the federal government and private sector in and to the Commonwealth.

BILL NUMBER: House Bill 1200--Passed (Chapter 103, 1998 Acts).
PATRON: O'Brien
SUMMARY: ***Standards of Quality; technological proficiency.*** Revises the Standards of Quality to direct school divisions to incorporate within their programs of instruction for grades K-12 emphasis on technological proficiency. The Standards of Learning for mathematics, English, science, and history and social science, revised in 1995, include computer and technology standards for skills to be acquired by the end of grades five and eight.

BILL NUMBER: House Bill 1237--Passed (Chapter 696, 1998 Acts).
PATRON: Cantor
SUMMARY: ***Local governments; telecommunications facilities.*** Provides that local government law relating to buildings, monuments, and lands control the acquisition of telecommunications facilities for the operation of wireless enhanced public safety telephone service systems.

BILL NUMBER: House Bill 1308--Stricken from docket.
PATRON: Rust
SUMMARY: ***Virginia Technology Training Act.*** Establishes the Virginia Technology Training Act, comprised of the Virginia Technology Training Certificate Program, an initiative consisting of certificate programs approved by the State Board for Community Colleges that (i) do not otherwise lead to an associate degree and (ii) provide instruction in information technology and other diversified technical curricula designed to meet specific, identified workforce needs in Virginia. Assisting the Board is the 15-member Virginia Technology Training Council, comprised of legislators, citizens, and executive branch officials, which recommends technology training programs offered by community colleges, proprietary schools, and other entities for inclusion in the Program. Regional Workforce Centers in each planning district assist the Council in this endeavor. A request for proposals process is also outlined, whereby the Council identifies technology training demand and programmatic needs. The Technology Training Student Loan Program and Revolving Fund, administered by the Small Business Financing Authority, is created to guarantee loans for students enrolled in approved certificate programs. Certificate programs offered by community colleges may be included in state funding for community colleges.

BILL NUMBER: House Bill 1317--Carried over in House Science and Technology.
PATRON: Marshall
SUMMARY: ***School-based access to information infrastructure.*** Establishes requirements for public elementary and secondary schools providing student access to the Internet and other aspects of the electronic information infrastructure. The bill requires such schools to employ computer hardware or software inhibiting access to materials harmful to juveniles, obscene materials, child pornography and other materials inconsistent with public schools' educational mission. Where information infrastructure access is provided to students in grades K through 8, the schools must obtain hardware or software limiting such students' information infrastructure access, to the extent technically feasible, to preselected uniform resource locators, or URLs, newsgroups, or files within newsgroups determined to be consistent with public schools' educational mission, and which do not contain materials harmful to minors, obscene materials, or child pornography. The bill also stipulates that no student may access information infrastructure services via any school's computer system unless the student's parent or guardian has furnished prior, written authorization for such access. Schools are permitted by the bill to condition students' use of such services upon first obtaining written liability releases from students' parents or guardians. The bill also directs the State Board of Education to develop and distribute, on or before September 1, 1998, written guidelines for school-sponsored student access to information infrastructure services. All public schools are required to be in compliance with the provisions of this bill on and after November 1, 1998.

BILL NUMBER: House Bill 1325--Carried over in House Science and Technology.
PATRON: Marshall
SUMMARY: ***Personal Privacy Information Act; sale or release of certain electronic information prohibited; damages.*** Requires providers of electronic mail or message services to obtain consent from their subscribers prior to selling or otherwise releasing subscribers' names or electronic mail or message addresses. The bill also requires providers to determine those types or categories of unsolicited electronic mail or messages the subscriber does not wish to receive. Violations are subject to $100 in damages, plus reasonable attorney's fees and costs.

BILL NUMBER: House Bill 1331--Passed (Chapter 165, 1998 Acts).
PATRON: Keating
SUMMARY: ***Wireless Enhanced Public Safety Telephone Service Act created.*** Requires Virginia's cellular telephone and personal communications systems providers to collect monthly billing surcharges of 75 cents upon each telephone number assigned by a provider to a commercial mobile radio service number (which includes cellular telephone service and

personal communication service) to their customers for the purpose of establishing and maintaining a federally mandated emergency 911 system for these customers. These surcharges are paid into a wireless 911 fund and then distributed to counties and municipalities that operate public safety answering points and to service providers to defray capital costs and operating expenses incurred in providing service to wireless E-911 calls. The bill also establishes an advisory board which will assist in the administration of the wireless 911 fund, oversee the distribution of funds, and advise the General Assembly, no later than December 1, 2001, on the adequacy of the fund to make qualifying payments. The bill expires July 1, 2002.

BILL NUMBER: House Bill 1350--No action taken in House Health, Welfare, Institutions.
PATRON: Wilkins
SUMMARY: ***Department of Social Services; public assistance fraud; finger imaging.*** Requires DSS to establish a finger imaging program to combat public assistance fraud. As a condition of receipt of public assistance, all applicants and recipients of public assistance shall undergo electronic finger imaging to prevent multiple enrollments in assistance programs. The State Board of Social Services shall implement regulations to carry out the finger imaging program.

BILL NUMBER: House Bill 1382--Carried over in House Courts.
PATRON: Tata
SUMMARY: ***Home/electronic incarceration of a juvenile.*** Provides that no juvenile who at the time he is sentenced is attending or eligible to attend a public primary, secondary or high school shall be sentenced to home/electronic incarceration if such sentence would permit him to attend such public school while being monitored by an electronic device attached to his body.

BILL NUMBER: House Bill 1397--Carried over in House Transportation.
PATRON: Katzen
SUMMARY: ***Photo red enforcement; Town of Warrentown.*** Allows the Town of Warrenton to use photo monitoring systems to enforce traffic light signals.

BILL NUMBER: House Bill 1402--Carried over in House Science and Technology.
PATRON: Marshall
SUMMARY: ***Trade and Commerce; information infrastructure providers; restrictions on use of services; penalty.*** Provides that any person who, as a registered or trial subscriber to or as an authorized user of an information infrastructure service furnished to the general public, utilizes a provider's service and knowingly breaches or violates any express content or utilization restriction thereof (i) which such provider has placed on the use of such service and (ii) for which such person has received notice prior to utilizing such service shall, for each breach or violation, be liable in

liquidated damages of $500 to such provider, or for actual damages, whichever amount is greater.

BILL NUMBER: House Joint Resolution 25--Passed.
PATRON: McEachin
SUMMARY: ***Study; Clerks of the Virginia House of Delegates and Senate; constituent services.*** Requests the Clerks to examine the rules, policies, procedures, and limitations governing the Virginia General Assembly's constituent services, and to report their findings and recommendations to their respective Committees on Rules.

BILL NUMBER: House Joint Resolution 36--Passed. JCOTS recommendation.
PATRON: Plum
SUMMARY: ***Resolution; sense of the Virginia General Assembly; Internet should remain free from fees, taxes, etc.*** Expresses the sense of the General Assembly that services which provide access to the international network of computer systems (commonly known as the Internet) and other related electronic communication services, as well as data transmitted via such services, should remain free from fees, assessments, or taxes imposed by the Commonwealth and its political subdivisions.

BILL NUMBER: House Joint Resolution 37--Passed. JCOTS recommendation.
PATRON: Plum
SUMMARY: ***Designating "World Congress on Information Technology Week."*** Designates June 21-27, 1998, as "World Congress on Information Technology Week."

BILL NUMBER: House Joint Resolution 38--Passed by indefinitely in House Rules.
JCOTS recommendation. Letter to JCOTS and CIT to study.
PATRON: Diamonstein
SUMMARY: ***Legislative study; Uniform Commercial Code Revised Article 2B.*** Establishes a joint subcommittee to draft legislation for the 1999 Virginia General Assembly Session which considers and implements Uniform Commercial Code Revised Article 2B passed by the National Conference of Commissioners on Uniform State Laws and the American Law Institute.

BILL NUMBER: House Joint Resolution 47--Passed. JCOTS recommendation.
PATRON: Diamonstein
SUMMARY: ***Recognizing the contributions of Sir Joseph John Thomson, O.M.*** Recognizes the contributions of Sir Joseph John Thomson, O.M., on the 100th anniversary of his discovery of electrons.

BILL NUMBER: House Joint Resolution 51--Passed.
PATRON: Van Landingham
SUMMARY: ***Study; Joint Legislative Audit and Review Commission; Virginia voter registration system and elections offices.*** Directs JLARC to study the Virginia voter registration system, its computer platform, and the relationship between the State Board of Elections office and local registrars' offices in light of new demands triggered by the National Voter Registration Act, increases in the number of registered voters, changes in the handling of campaign finance disclosure reports, and advances in technology. (Part of Senate Bill 154, a JCOTS recommendation which was killed, was incorporated into this resolution.)

BILL NUMBER: House Joint Resolution 113--Passed.
PATRON: Thomas
SUMMARY: ***Department of Mental Health, Mental Retardation and Substance Abuse Services; implementation of managed care technologies.*** Expresses the sense of the Virginia General Assembly that DMHMRSAS continue to evaluate and implement managed care technologies in the provision of mental health, mental retardation, and substance abuse services.

BILL NUMBER: House Joint Resolution 124--Passed.
PATRON: Davies
SUMMARY: ***Study; State Board for Community Colleges and Board of Education; technology centers.*** Requests the Boards to study the feasibility of establishing technology centers to focus on workforce training and education. The Boards shall consider, among other things (i) the appropriate placement and governance of such centers and the role of community colleges in supporting these centers; (ii) ways in which these centers might facilitate the establishment of community incentive partnerships and expand dual enrollment opportunities; (iii) coordination between the community colleges and the public schools addressing workforce training and education; (iv) linkages between education and business that may promote educational preparation for the work place; and (v) such other issues as the Boards may deem appropriate.

BILL NUMBER: House Joint Resolution 155--Passed.
PATRON: Almand
SUMMARY: ***Study; Judicial Council; recordings of court proceedings.*** Requests the Judicial Council to study video and audio recording of general district and circuit court proceedings.

BILL NUMBER: House Joint Resolution 171--Killed in House Science and Technology 6-8.
PATRON: Darner
SUMMARY: ***Study; Judicial Council; "quick court" kiosks.*** Requests the Judicial Council to study computerized legal assistance for the public.

BILL NUMBER: House Joint Resolution 176--Passed.
PATRON: Puller
SUMMARY: ***Study; Department of Education; guidelines for technology connectivity.*** Requests the Department to assess the technology needs of local school divisions and to develop guidelines for technology connectivity for the public schools.

BILL NUMBER: House Joint Resolution 228--Passed.
PATRON: McClure
SUMMARY: ***Requesting transportation planning agencies to incorporate technology in the planning process.*** Requests transportation planning entities and agencies to incorporate transportation technology in the transportation planning process.

BILL NUMBER: House Joint Resolution 231-- Passed by indefinitely in House Rules. Letter to JCOTS to study.
PATRON: O'Brien
SUMMARY: ***Legislative study; Internet filing of tax returns.*** Establishes a joint legislative subcommittee to study the use of the Internet as a means of filing tax returns.

BILL NUMBER: House Joint Resolution 234--Passed.
PATRON: Tate
SUMMARY: ***Requesting Virginia Department of Transportation to establish survey benchmarks.*** Requests VDOT to establish survey benchmarks along highway rights-of-way.

BILL NUMBER: House Joint Resolution 253--Passed.
PATRON: Plum
SUMMARY: ***Resolution; sense of the Virginia General Assembly; Governor should support work of the United States Innovation Partnership.*** Expresses the sense of the General Assembly that His Excellency, the Governor of the Commonwealth, support the work of the United States Innovation Partnership.

BILL NUMBER: Senate Bill 101--No action taken in House Transportation.
PATRON: Edwards
SUMMARY: ***Laser speed measurement devices; Northern Virginia, Roanoke County, and Roanoke City.*** Allows local law-enforcement agencies in Northern Virginia, Roanoke County, and Roanoke City to use laser speed measurement devices.

BILL NUMBER: Senate Bill 152--Passed (Chapter 636, 1998 Acts). JCOTS recommendation.

PATRON: Ticer

SUMMARY: ***Administration of government; electronic filing of information.*** Allows agencies responsible to the executive secretariats to (i) accept the electronic filing of any information required or permitted to be filed with such agencies and (ii) prescribe the methods of executing, recording, reproducing, and certifying such filing. The bill, which excludes the Virginia Public Procurement Act, is modeled after § 13.1-604 pertaining to the State Corporation Commission.

BILL NUMBER: Senate Bill 153--Passed (Chapter 127, 1998 Acts). JCOTS recommendation.

PATRON: Ticer

SUMMARY: ***Electronic signatures.*** Repeals the second enactment of Chapter 917 of the 1997 Acts of Assembly, which provided that the Council on Information Management adopt final regulations on the use of digital signatures by September 1, 1998. The bill: (i) strikes CIM's authority to promulgate regulations to implement state agencies' and localities' use of digital signatures in favor of setting out criteria in the bill; (ii) changes the term "digital" to "electronic" to encompass signatures created by any electronic method; (iii) makes other necessary definitional changes; (iv) sets out criteria that a trier of fact must assess to determine the evidentiary weight to be given a particular electronic signature; and (v) sets out criteria that state agencies and localities must follow to use electronic signatures (which are the same criteria that a trier of fact must assess).

BILL NUMBER: Senate Bill 154--Killed in Senate Privileges and Elections 4-9. JCOTS recommendation.

PATRON: Schrock

SUMMARY: ***Absentee ballot applications.*** Requires the State Board of Elections to implement a system, beginning with the general election in November 1999, which enables persons to request, receive, and file absentee ballot applications electronically through the Internet. The bill also ensures that false statements made electronically are punishable the same as any other false statement made in connection with Virginia's election laws (as the crime of election fraud, a Class 5 felony). In a second enactment clause, the Board is requested to study the implementation of a system for registering voters and voting ballots (including absentee ballots) electronically through the Internet and report its findings and recommendations to the Governor and the 1999 Session of the General Assembly. (Parts of this bill were incorporated into House Bill 591 and House Joint Resolution 51, both of which passed.)

BILL NUMBER: Senate Bill 155--Stricken from docket. JCOTS recommendation.
PATRON: Newman
SUMMARY: ***Virginia Freedom of Information Act; definitions; notice; electronic communication meetings.*** Amends FOIA to: (i) add a definition of "electronic communication means" by which meetings may be held; (ii) move the definition of "emergency" currently found in the electronic communication meeting section to FOIA's general definition section; (iii) require that, except in an emergency, notice of a meeting must be provided no less than three working days before the meeting in a manner reasonably calculated under the circumstances to apprise the public of the meeting information; (iv) maintain the current requirement that notice for emergency meetings be given contemporaneously with notice provided to members of the public body, but add that such notice be provided in a manner reasonably calculated under the circumstances to apprise the public of the meeting information; (v) maintain the current requirement that a quorum of the public body must be present to conduct a meeting, but delete the current requirement that the quorum must be physically present in one location in favor of requiring that, for purposes of establishing a quorum, every location where a member of the public body is physically present must be in Virginia and open and accessible to the public; (vi) after a quorum is established, permit members of the public body who are not physically present in Virginia or at a location open and accessible to the public to participate in the meeting, but prohibit such members from voting; (vii) delete the current requirement that a 30 days' notice of the electronic communication meeting be provided in favor of requiring the same notice as for all other public meetings (three days under the bill); (viii) require public bodies that hold electronic communication meetings to report annually thereon; (ix) remove the cap on electronic communication meetings (currently set at no more than 25 percent of all annual meetings); and (x) clearly state that it is a violation of FOIA for any public body or any member thereof to use electronic communications means to circumvent FOIA's spirit or letter. The bill retains the current prohibition on local public bodies' use of electronic communication means to hold meetings.

BILL NUMBER: Senate Bill 156--Vetoed by Governor. JCOTS recommendation.
PATRON: Newman
SUMMARY: ***Virginia Freedom of Information Act; electronic communication meetings.*** Provides an exemption from FOIA's restrictions on electronic communications meetings to (i) public bodies in the legislative branch of Virginia state government, (ii) state agencies under the control of the Secretary of Commerce and Trade and (iii) the Virginia Community College System. The bill clarifies that it does not apply to any session of the Virginia General Assembly. The bill adopts the basic requirements of nonelectronic communication public meetings as the required procedure

for holding electronic communication meetings. The bill contains an emergency clause and expires on July 1, 1999.

BILL NUMBER: Senate Bill 165--Carried over in Senate Education and Health.
PATRON: Couric
SUMMARY: ***Excellence in public schools.*** Revises the Standards of Quality and other education provisions to incorporate recommendations of the HJR 196 Commission on the Future of Public Education. Among the changes, the Board of Education must establish Standards of Learning for an articulated technological studies program in grades K-12, school boards must employ at least one full-time educational technology expert for the school division, and school divisions must establish a voice mail communication system after regular school hours for parents, families, and teachers by the year 2000.

BILL NUMBER: Senate Bill 166--Carried over in Senate Finance.
PATRON: Couric
SUMMARY: ***Training and professional development of teachers, administrators, and superintendents.*** Per the recommendations of the HJR 196 Commission on the Future of Public Education, establishes several teacher training and development initiatives, such as a two-year program for educational leadership and professional development for public school personnel that will include leadership training for division superintendents and principals and instructional training for teachers, including training in instruction in English, mathematics, science, and social studies as well as technological studies.

BILL NUMBER: Senate Bill 168--Vetoed by Governor.
PATRON: Couric
SUMMARY: ***Business and education partnerships.*** Establishes the Business and Education Grants Program and Fund, from such funds as may be appropriated for the purpose and from gifts, donations grants, bequests, etc., to support 16 matching grants to be awarded annually on a competitive basis to school divisions, with two grants for each superintendent's region, to support innovative partnerships between school divisions and local business and industry and a special nonreverting fund within the state treasury known as the Business and Education Grants Fund.

BILL NUMBER: Senate Bill 199--Passed (Chapter 518, 1998 Acts).
PATRON: Reasor
SUMMARY: ***Offenses involving telecommunications devices.*** Makes a Class 6 felony to possess an unlawful telecommunications device (cloned phone) and equipment used to create an unlawful telecommunications device with intent to manufacture a cloned phone. The bill enhances the penalty for

possession of a cloned phone and sale of a cloned phone from a Class 1 misdemeanor to a Class 6 felony.

BILL NUMBER: Senate Bill 227--Carried over in House Science and Technology.
PATRON: Trumbo
SUMMARY: ***Computer invasion of privacy.*** Adds definitions of "without authority" and "financial or personal information" to the crime of computer invasion of privacy.

BILL NUMBER: Senate Bill 252--Passed (Chapter 777, 1998 Acts).
PATRON: Wampler
SUMMARY: ***Virginia Freedom of Information Act; meetings of board of visitors of the University of Virginia.*** Provides that UVA's board of visitors may conduct meetings through audio/video communication when at least two-thirds of the membership is physically assembled at its regular meeting place and when the customary requirements of public notice, voting and recordation of the meetings are followed. The bill limits such meetings to 25 percent of all meetings held by the board. The bill expires July 1, 2000.

BILL NUMBER: Senate Bill 297--Passed by indefinitely in Senate Commerce and Labor.
PATRON: Reynolds
SUMMARY: ***Labor and employment; electronic payment of wages and salaries.*** Allows employers to pay the wages or salaries of their employees by electronic automated transfer. This bill removes provisions of law that permitted an employee to prevent automated payment by refusing to designate a financial institution to receive the funds, thereby requiring the employer to render payment by check or cash. The wages or salary of the employee may be transferred to the financial institution designated by the employee, unless such employee fails to designate such institution. If the employee fails to designate a financial institution to receive the wages or salary, the wages or salary may be transferred to a financial institution authorized to do business in the Commonwealth and selected by the employer after providing thirty days' written notice to the employee.

BILL NUMBER: Senate Bill 380--Carried over in Senate Courts.
PATRON: Howell
SUMMARY: ***Independent testing of DNA evidence.*** Requires the return of unused, untested DNA samples to the submitting enforcement agency which is to preserve the sample, according to its general procedures governing retention and storage of evidence, for independent testing by the accused. The accused must first seek a court determination that an independent analysis is reasonably necessary. The bill requires any independent analysis requested by the accused to be performed by a laboratory in

compliance with the standards promulgated by the FBI's DNA Advisory Board.

BILL NUMBER: Senate Bill 384--Passed (Chapter 396, 1998 Acts).
PATRON: Hawkins
SUMMARY: ***Workforce training at community colleges.*** Modifies the definition of "comprehensive community college" to include the provision of noncredit training and retraining courses and programs of varying lengths to meet the needs of business and industry in the Commonwealth and designates the Virginia Community College System as the state agency with primary responsibility for workforce training at or below the associate degree level, exclusive of the vocational and technical education programs provided through and administered by the public school system. The VCCS's responsibility will not preclude other agencies from also providing such services as appropriate, but these activities must be coordinated by the community colleges. This bill is a recommendation of the HJR 622 Joint Subcommittee to Study Noncredit Education for Workforce Training in Virginia.

BILL NUMBER: Senate Bill 402--Passed (Chapter 67, 1998 Acts).
PATRON: Couric
SUMMARY: ***Trade and Commerce; Virginia Assistive Technology Device Warranties Act created.*** Creates a "lemon law" for assistive technology devices. Assistive technology devices are mechanical devices and instruments used by disabled individuals to communicate, see, hear or maneuver, e.g., manual wheelchairs, motorized scooters, hearing aids and communications devices for the deaf, talking software, and Braille printers. The bill's key provisions stipulate that in addition to any express manufacturers' warranties otherwise provided, manufacturers (a term defined in the bill to include authorized dealers, importers and distributors) of assistive technology devices impliedly warrant, for a period of at least one year following delivery to consumers, that their products are free of defects substantially impairing their value. During this one-year warranty period, consumers may obtain repairs of their assistive technology devices from manufacturers at no charge. If, within the 12-month period following delivery, the devices are (i) subject to repair for the same or related problem three times or (ii) not practically usable for a cumulative total of 30 days with no fungible loaner available, the devices must be replaced within 30 days, or the purchaser refunded his full purchase price (plus collateral costs) within 14 days. If the device was leased, the manufacturer must refund all lease payments plus a proportional share of any required deposit. The bill prohibits the sale or lease of any device previously returned unless the reason for its return is disclosed to its prospective customer or lessee. A consumer's remedies are not limited to the Act's provisions; he may seek civil relief as well. Consumers are also furnished

the option of submitting disputes arising under this act to the Dispute Resolution Unit of the Office of Consumer Affairs, Division of Consumer Protection. A nearly identical version of this bill was approved by the 1997 Session of the General Assembly, with the proviso that its provisions would not become effective unless reenacted by the 1998 Session of the General Assembly.

BILL NUMBER: Senate Bill 426--Passed (Chapter 788, 1998 Acts).
PATRON: Newman
SUMMARY: ***Threats.*** Makes threats made by any form of communication which produces a written message punishable as a Class 6 felony.

BILL NUMBER: Senate Bill 459--Carried over in Senate Rehabilitation and Social Services.
PATRON: Barry
SUMMARY: ***Department of Social Services; public assistance fraud; finger imaging.*** Requires DSS to establish a finger imaging program to combat public assistance fraud. As a condition of receipt of public assistance, all applicants and recipients of public assistance shall undergo electronic finger imaging to prevent multiple enrollments in assistance programs. The State Board of Social Services shall implement regulations to carry out the finger imaging program.

BILL NUMBER: Senate Bill 480--Passed (Chapter 642, 1998 Acts).
PATRON: Edwards
SUMMARY: ***Placement of amateur radio antennas.*** Requires local ordinances involving the placement, screening or height of antennas to reasonably accommodate amateur radio antennas and to impose the minimum regulation necessary to accomplish the locality's legitimate purpose. No local ordinance shall (i) restrict amateur radio antenna height to less than 200 feet above ground level less (in less densely populated localities) or 75 feet above ground level (in more densely populated localities) as permitted by the Federal Communications Commission or (ii) restrict the number of support structures. Localities may continue to regulate amateur radio antennas with regard to certain screening, setback, placement, and health and safety requirements.

BILL NUMBER: Senate Bill 541--Carried over in Senate Finance.
PATRON: Hanger
SUMMARY: ***Local E-911 tax exemption for telephone lines dedicated to Internet-access or other data transmission through a modem.*** Exempts telephone lines that are dedicated to Internet access or other data transmission through a modem from local E-911 tax.

BILL NUMBER: Senate Bill 577--Passed (Chapter 742, 1998 Acts).
PATRON: Whipple
SUMMARY: ***Public rights-of-way; mileage-based fees; costs of relocating telecommunication facilities in public rights-of-way.*** Establishes the Public Rights-of-Way Use Fee to be used for the collection of fees from certificated providers of local exchange telecommunications service for the use of public rights-of-way. This fee will replace any and all fees of general application for use of public rights-of-way for localities whose public streets and roads are maintained by the Virginia Department of Transportation. Localities that maintain their own roads may impose the fee by ordinance. Localities imposing the fee and the Commonwealth Transportation Board will collect, in an equal amount each month, an annual amount calculated by charging an established amount for (i) number of miles of public highway and (ii) number of feet of new installations installed in existing public rights-of-way. The fee is determined by dividing the sum of the total amount from highway mileage and new installations by the total number of access lines in participating localities. The amount is included, as a separate item, on each consumer's monthly local exchange billing statement in an amount of no less than 50 cents per access line. The certificated provider of local exchange service will remit the amount collected directly back to localities that maintain their own public streets and roads and that impose the fee by ordinance. In localities whose roads are maintained by VDOT, the fees shall be remitted to VDOT and then apportioned back to such localities on a population basis. Cities or towns electing not to impose the fee by ordinance may not impose on certificated providers of local exchange service restrictions on the use of the rights-of-way that (i) are unfair or unrecoverable or (ii) are any greater than those imposed on other nonpublic providers of public services. The bill also establishes a schedule for the reimbursement to telecommunications service providers for expenses related to the relocation of existing facilities when the expense is incurred at the direction of the locality or VDOT. The provisions of this bill are not applicable to Henrico County.

BILL NUMBER: Senate Bill 578--Passed (Chapter 643, 1998 Acts).
PATRON: Whipple
SUMMARY: ***Open video systems.*** Allows localities to regulate an open video system to the maximum extent permitted by federal law.

BILL NUMBER: Senate Bill 580--Carried over in Senate General Laws.
PATRON: Whipple
SUMMARY: ***Information Technology Access Act created for individuals who are blind or visually impaired.*** Creates the Information Technology Access Act to secure the benefits of access to information technology for individuals who are blind or visually impaired through the procurement of

such technology in accordance with standards for equivalent access by both visual and nonvisual means.

BILL NUMBER: Senate Bill 588--Passed (Chapter 802, 1998 Acts).
PATRON: Forbes
SUMMARY: ***Photo-enforcement of toll payments.*** Authorizes use of photo-monitoring equipment for enforcement of toll payments for use of toll facilities.

BILL NUMBER: Senate Bill 589--Stricken from docket.
PATRON: Ticer
SUMMARY: ***Department of Environmental Quality; posting polluting malfunctions on Internet.*** Requires DEQ to post on its web site information regarding malfunctions reported by those that have permits to emit air pollutants. DEQ currently requires reporting of the malfunctions. Information to be included in the reports is specified.

BILL NUMBER: Senate Bill 689--No action taken in House General Laws.
PATRON: Walker
SUMMARY: ***Council on Information Management; coordinate statewide human services information and referral system.*** Provides that CIM shall require state agencies, boards, councils, or commissions to collaborate with the statewide human services information and referral system before development or implementation of a human service hotline, helpline, or information service. The bill also provides for staggered terms on the Human Services Information and Referral Advisory Council.

BILL NUMBER: Senate Joint Resolution 36--Passed. JCOTS recommendation.
PATRON: Ticer
SUMMARY: ***Study; Council on Information Management, etc.; Virginia Public Procurement Act; electronic contracting and procurement.*** Requests CIM; the Departments of Accounts, General Services, Motor Vehicles, and Transportation; the State Corporation Commission; the Attorney General; the University of Virginia; Virginia Tech; the Virginia Association of Counties; and the Virginia Municipal League to jointly study methods of electronic contracting and procurement under the VPPA, along with any other interested parties or individuals.

BILL NUMBER: Senate Joint Resolution 37--Passed. JCOTS recommendation.
PATRON: Newman
SUMMARY: ***Study; Center of Innovative Technology; technological and scientific assets.*** Requests CIT to develop statewide strategies regarding certain technological and scientific research and development assets.

BILL NUMBER: Senate Joint Resolution 38--Passed. JCOTS recommendation.
PATRON: Howell
SUMMARY: ***Study; Secretaries of Commerce and Trade and Education; statewide strategy to increase technologically-skilled workers.*** Requests the Secretaries to jointly develop a statewide strategy to increase the number of computer scientists, engineers, and other technologically skilled workers in Virginia by 2002.

BILL NUMBER: Senate Joint Resolution 39--Left in Senate Rules. JCOTS recommendation.
PATRON: Howell
SUMMARY: ***Study; Center for Innovative Technology; university-affiliated research parks.*** Requests CIT to study university-affiliated research parks.

BILL NUMBER: Senate Joint Resolution 175--No action in House Rules.
PATRON: Forbes
SUMMARY: ***Resolution; sense of the Virginia General Assembly; television coverage of legislative sessions.*** Expresses the sense of the General Assembly that television coverage of the sessions of the Senate and the House of Delegates should be provided to private broadcasting interests for transmission to the citizens of the Commonwealth.

BILL NUMBER: Senate Joint Resolution 228--Passed.
PATRON: Woods
SUMMARY: ***Designating "Technology Month."*** Designates June 1998 as "Technology Month" in Virginia, in honor of the 1998 World Congress on Information Technology, to be hosted by Fairfax County and George Mason University.

APPENDIX 6.
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