FEASIBILITY OF AN AUTOMATED JUVENILE LAW ARCHIVE

FINAL REPORT

Submitted by:

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This study is supported by Grant #82-JN-AX-0011
from the
National Institute for Juvenile Justice and Delinquency Prevention
Office of Juvenile Justice and Delinquency Prevention
United States Department of Justice

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I. BACKGROUND AND PURPOSE

The National Center for Juvenile Justice has been accumulating the juvenile legislation of all 50 states and the District of Columbia since 1975 and has conducted legal research and comparative analyses of this legislation in response to inquiries from the Office of Juvenile Justice and Delinquency Prevention, its grantees, other researchers in the field, the public and the media for many years, supported in part by grants from OJJDP. In October, 1982, NCJJ was awarded a grant from OJJDP to determine the feasibility of creating an automated archive of the juvenile codes of all jurisdictions by employing computerized information storage and retrieval techniques and automated word processing to facilitate the legal research process and the dissemination of information.

Following a thorough research needs assessment and an extensive state of the art review, NCJJ filed a preliminary report with OJJDP in March, 1983. That report concluded that the development of such a computerized information retrieval system for the juvenile legislation of all jurisdictions is feasible and recommended that it be designed and operated on a dedicated system with software tailored for its particular requirements. Following review and discussion of the preliminary report with project staff, OJJDP staff concurred in the recommendations of that report and directed NCJJ to proceed in the final report to specify the functional and equipment requirements of such a system and to estimate the costs of hardware, software, and personnel to implement and maintain such a resource.

This is the Final Report on the Feasibility of an Automated Juvenile Law Archive. Following a brief review of the findings and recommendations of the preliminary report, specifications of the system and cost estimates for implementation and operation of the archive will be provided.

II. NEEDS ASSESSMENT

2.1 The Need for Information Regarding State Juvenile Laws

A prerequisite to informed policy-making is the availability of relevant information. Whether the current administration and the Congress wish to continue the recent federal role in shaping the juvenile justice policies of the states or instead to assist state and local officials to develop informed state and local policies for dealing with the problems of juvenile crime and improving the administration of their juvenile justice systems, there will continue to be substantial needs for information about legislative alternatives employed around the country. Congressional hearings on reauthorization of the Juvenile Justice and Delinquency Prevention Act have traditionally prompted a flurry of request for information on national patterns and trends in state juvenile codes. Similarly, state legislatures considering amendment or revision of their juvenile laws are constantly seeking information on what alternatives have been enacted in other states and whether or not those alternatives have proven effective in dealing with problems similar to their own.

The juvenile justice system in each state is defined by the legislation which establishes the jurisdiction, powers, procedures and authority of its various components. It is only within the context of state legislation that research studies of the juvenile justice system can be effectively designed, and only against the background of state legislation that statistical reports and research and planning studies of the juvenile justice system can be properly interpreted and understood. Comparisons of one state's data on the handling of juvenile offenders to that of another, comparison of juvenile arrest statistics across jurisdictions or over time, projections of the impact of a change in sentencing legislation on institutional bed space requirements are just a few examples of tasks which require information about relevant state juvenile legislation in order to be properly designed, conducted and understood.

Juvenile laws have received considerable attention in state legislatures in the past decade in response to decisions of the United States Supreme Court and the impetus for changing the juvenile justice system provided by the Federal Juvenile Justice and Delinquency Prevention Act of 1974. The dynamic nature of state juvenile laws may be expected to continue for some time as a result of the continuing interest of the federal government in improving the system of justice in this country, the impact of several major juvenile justice standards development efforts which have culminated recently in the dissemination of published standards, and the heightened concern of both the public and government officials about serious and violent crime, particularly that committed by youth, and how to deal with it most effectively. As long as state juvenile codes remain in a high state of flux, there will be a continuing need for information regarding new approaches, model legislation, national profiles and national trends.

The need for a legal resource for information, analysis and comparison of state juvenile laws and national standards is perhaps best evidenced by the

fact that OJJDP and other government agencies have supported a variety of such research efforts over the years. A partial list of federally funded projects involving such comparative analysis was included as Appendix B of the Preliminary Report.

Suppliers of information about juvenile legislation report that inquiries are received from a broad spectrum of the community, including OJJDP staff, state and federal legislators and legislative staff, practicing attorneys, child advocacy groups, the media, researchers, professional membership organizations, judges, children's service administrators, lobbyists, candidates for political office, parents and children themselves. Most information providers are also information seekers and information brokers, often seeking the assistance of others in the field to answer specific inquiries which they may receive and compiling libraries of secondary source materials distributed by others.

Requests for information can be received by phone, requiring immediate response to a simple and direct question. Or a comprehensive analytic report on a general subject area of juvenile law providing a national profile of legislative patterns in all states may be commissioned by OJJDP for congressional committees or for publication and distribution to the research community, legislative advocacy groups, etc. The list of publications in Appendix C of the Preliminary Report provides visible evidence of the latter need. Less visible perhaps are the hundreds of responses by telephone or letter, to less formal information requests, provided by the grantees and contractors who produced those reports. A state legislator may need the text of one or more sections of another state's legislation as a model for drafting a bill. Legislative staff may need to know how many states already have legislation similar to that pending before their legislature. A reporter may want to know what are the current trends or fads for dealing with violent juvenile crime or in how many states a 12-year-old can be tried as an adult for murder. The possibilities are endless.

At the other end of the spectrum is the authoritative, in-depth, comprehensive analysis of a complex issue of juvenile law, requiring the identification and collection of all relevant statutory sections from each state, the legal synthesis of this divergent body of material, conceptualization of the significant legal elements and legislative patterns, and the description and presentation of the results of such legal analysis in a way that effectively communicates them to the intended audience. These are the most important products of any legislative research system. They require the greatest expenditure of resources and often provide the information used to respond to the myriad of informal requests for information described above. For these reasons, it is particularly important that the quality of such research products be high and that the research method be well documented in order that the research may be replicated and updated with a minimum of effort.

2.2 The Need for an Archive of State Juvenile Laws

Unfortunately, many of the reports included in Appendix C of the Preliminary Report have not met that high standard of research quality, and substantial investments of time and money have been made in products whose value to the juvenile justice community has been, at best, short-lived. Some reports have suffered from inaccuracy; some lack clarity; some are incomplete; some are outdated before they become available; and some are not appropriate for the audience to which they are directed. But the most serious fault of many of these reports is that they fail to provide the documentation of sources and methods which would permit other researchers to verify the results and to replicate the work in the future. The result is often substantial duplication of effort and the inability to develop accurate trend analyses because of the difficulty of ensuring consistent interpretation and analysis of legislation across states and over time.

In 1979 OJJDP recognized the need to develop a national archive of state juvenile codes and awarded NCJJ its first Comparative Analysis of Juvenile Codes grant. Until that time there was no single source of up to date information on the juvenile codes of all 51 jurisdictions. In many states the lag time between the passage of new legislation and its availability in law libraries around the country wa many months; in several it was as long as two or three years. As a result many of the legislative analyses funded by OJJDP were stale even before they were completed and published.

In addition most law libraries maintain only the most recent versions of each state's officially published legislation. As a result, historical research into state juvenile legislation is extremely difficult or, for those states which do not publish an annotated code, impossible. Researchers or policy-makers who needed to know the particular provisions of law in a state or the pattern of law nationwide on a particular issue were limited to secondary sources, if they existed, many of which suffered from the deficiencies described above.

Under its grant from OJJDP, NCJJ established direct contact with legislative service bureaus in all states and periodically requested any amendments to the states' juvenile codes passed in each legislative session. As new legislation was received by the archive, historical records of previous legislation were maintained. For the first time, a single resource could provide both up to date and historical records of the juvenile codes of all jurisdictions. Moreover, the archive was staffed by expert legal researchers with experience in the juvenile field, who understood the importance of accurate, well-documented, replicable and verifiable legal analysis as a prerequisite to quality trend analysis.

Hundreds of thousand of dollars in federal funds are expended each year by OJJDP and its grantees and contractors to obtain such information about state juvenile codes. Hundreds of thousands more in state, local and private funds are expended for the same purpose. A partial list of legislative analysis reports supported by federal funds was included in the preliminary report. To the cost of developing such published research reports of juvenile legislation must be added the investment in determining the statutory

environment in which hundreds of federal, state, local, and private research studies are conducted. The cost of retrieving and researching relevant juvenile legislation in conjunction with providing technical assistance and advocacy services, developing juvenile court typologies, determining the extent of compliance in the states with the JJDP Act, and providing the legislation segment of literature reviews for a myriad of projects is impossible to measure but clearly substantial.

In the preparation of many of the federally funded reports listed in Appendix C of the Preliminary Report, legislation and standards on many topics have been repeatedly compiled, researched, analyzed and/or reported. Duplication of effort has been particularly apparent in such areas as:

- compliance with federal requirements under the Juvenile Justice and Delinquency Prevention Act, addressed by Hutzler (1980), Vereb (1979), Paul (1980), McCulloh (1981), NJLC (1979), King (1980), Scientific Analysis Corp. (SAC) (1981), IJA/ABA (1980), and A.D.L. (1982);

- transfer of jurisdiction, addressed by Hutzler (1980), Vereb (1978), NJLC (1979), King (1980), Levin (1974), SAC (1981), Hamparian (1982), IJA/ABA (1980) and AJI (1977);

- delinquency and status offense jurisdiction of the juvenile courts, addressed by Hutzler (1977, 1980, 1982), NJLC (1979), King (1980), Beaser (1975), Task Force (1977), Levin (1974), SAC (1981), IJA/ABA (1980) and AJI (1977);

- disposition of juvenile offenders, addressed by AJI (1970), King (1980), Levin (1974), IJA/ABA (1980), Hutzler (1981), NJLC (1979), Beaser (1975), SAC (1981) and URSA (1982); and

- bail for juveniles, addressed by AJI (1970), King (1980), Levin (1974), Davis (1980), SAC (1981), IJA/ABA (1980).

Another example of duplication of effort in federally supported juvenile code analysis is that in 1979 the National Center for Juvenile Justice and the National Center for State Courts were independently and simultaneously photocopying the juvenile codes of all 50 states, NCJJ in conjunction with its ongoing Comparative Analysis of Juvenile Codes Project and NCSC under its "Gault Revisited" project.

Within the Office of Juvenile Justice and Delinquency Prevention, much duplication of effort has resulted from the performance of similar or identical juvenile code analysis under different program initiatives. Juvenile code research has been conducted not only under research auspices of the National Institute but also under Technical Assistance Grants, Advocacy Grants, and other OJJDP projects. Whether this duplication of effort has resulted from a lack of communication, coordination, and/or cooperation within the Office and/or among grantees and contractors is not important. It does not appear to have been either planned or productive.

A national archive of juvenile legislation could result in substantial cost savings on many federal grants and contracts by eliminating the need for much of the library research and telephone surveys required to obtain legislation relevant to various research efforts, technical assistance projects, literature review or advocacy efforts. A centralized source of juvenile legislation would not merely reduce the cost and the duplication of effort involved in obtaining the text of state legislation for analysis, but could also coordinate legislative analysis efforts thereby eliminating the even more costly duplication of effort involved in the legal analysis of the same legislation and legal issues by different parties simultaneously and could insure that documentation of legislative source material for such analyses would be available in the future to reduce substantially the cost of replication and updating of any statutory analysis reports or any part of the information they contain.

A national archive of juvenile legislation could also result in substantial cost savings to the states by providing a centralized source of information on the juvenile legislation of other states to state legislators and legislative service bureaus seeking model language for drafting legislation, information on national trends in conjunction with hearings on proposed legislation in their state, or information on the impact in other states of legislation similar to that proposed in their own legislature. The direct contact with state legislative service offices required to build and maintain an up-to-date juvenile law archive insures that those in state government to whom such a resource would be most valuable would be aware of it.

2.3 The Need for an Automated Juvenile Law Archive

Unfortunately the Comparative Analysis of Juvenile Codes' grants were never large enough to permit NCJJ to respond to the full range of needs for information on juvenile legislation, and because funds were limited, the grants were always subject to special conditions requiring the prior approval of the grant monitor to respond to other than incidental research requests. Because of the limited funding levels, the grants were essentially retainers which insured that NCJJ would maintain the legislative data base and the legal research expertise to respond to requests for information from NIJJDP or approved by NIJJDP. The availability of the information resource was never publicized; it was not formally announced through the National Criminal Justice Reference Service; nor were any of the comparative analysis reports produced by NCJJ under the grant and acknowledged within the agency to be the most authoritative and the most current information on the subjects they addressed ever made publicly available by OJJDP. Nevertheless, the archive permitted NCJJ to provide to OJJDP numerous legislative research reports which could be periodically updated and were based upon state legislation known to be current until many months after the delivery of the report, as compared to prior analyses, and those still being done by other grantees, which were often based on legislation which was two or three years out of date by the time the publication was available. In addition on several occasions with prior grant monitor approval NCJJ was able to save other grantees substantial amounts of time, effort and money in the performance of their grants by providing relevant legislation from the archive which would otherwise have been difficult or impossible to obtain.

It is now apparent that to realize the full potential of a National Juvenile Law Archive as a centralized source of information on the current and prior juvenile legislation of all states, automation is a necessity. The pace of state legislative activity in the field has made maintenance of paper files of current, amended, repealed, and enacted but not yet effective legislation extremely burdensome. The inability to integrate the language of amendments received in bill form into the body of text in paper files requires reference to many different documents to determine the current version of legislative provisions and the integration and retyping of text from several sources to provide the current language of a statute to those who need it. Many information needs in this area require prompt replies with accurate and up-to-date information which can only be provided with the speed which automation permits. Until now such information needs have either gone unanswered or have been met by reference to secondary sources, legislative analyses often many years out of date and not precisely on point. And finally, if the availability of the national juvenile law archive is no longer restricted to NIJJDP but made known throughout OJJDP, to federal grantees and contractors, and to state and local policy-makers and private researchers, automated data storage and retrieval and word processing technology will be required if the archive is to be responsive to the volume of requests for information which can be expected.

III. STATE OF THE ART

Project staff also conducted and extensive state of the art review, examining the leading commercially available automated legal research services (LEXIS and Westlaw), the private file or litigation support services of Mead Data Systems, Westlaw, Dialog, and Aspen Systems Corporation, the automated legal research systems of the U.S. Department of Justice (JURIS) and the Department of the Air Force (FLITE), the commercially marketed statutory retrieval and bill status reporting software of IBM (STAIRS) and Data Retrieval Corporation, and the legislative information systems operated by the National Clearinghouse on Child Abuse and Neglect, the National Criminal Justice Association, the National Council of State Governments and the National Council of State Legislatures. In our opinion none of these systems presented an adequate technical solution to the problem of an Automated Juvenile Law Archive.

All of the major computer assisted legal research and litigation support software packages are written in machine language and must be operated on IBM mainframe equipment. As a result, such software could only be employed in a time-sharing mode involving substantial and recurring costs for storage of the legislative data base and for connect time to access the data base for research. Increases in the size of the data base and/or in the use of the system would result in higher and higher recurring costs of the system. Access to such systems to update a data base is limited and expensive, which would severely limit the ability to maintain an up to date archive of legislation, since legislative calendars vary from state to state.

Most importantly, however, the only index/retrieval mechanism employed by all such software--full text word concordance indexing--would not be an effective tool for legal research in a multi-jurisdictional legislative data base, because the same word may have different meanings in different jurisdictions while different words may be used by different states or even within a state to mean the same thing. Without a highly effective index/retrieval tool, the cost of using the system both in attorney time at the terminal and in time sharing charges would be prohibitive.

Since the programs are written in machine language and vendors of litigation support and computer assisted legal research services do not permit users to modify the software or to develop application programs to work in conjunction with it, there is no ability to improve upon the retrieval software or to adapt it to this application. The suggestion of these time sharing vendors that development of a standard set of keywords or index terms which could be attached to each section of legislation in each state to provide a common set of retrieval terms would not, in our opinion, provide an adequate solution to the problem because of the wide variation in the structure and organization of legislation from state to state. Application of a single inquiry to all jurisdictions would too often result in the retrieval of too little material from many states and far too much from many others. The substantial costs of developing the lexicon, reading every section of legislation and deciding with which terms each section should be associated, and the recurring costs to classify each new piece of legislation could not be justified for the limited improvement in retrieval accuracy which such an index might provide.

The conclusion of the state of the art analysis was that existing CALR software is not suited to this application, but that application software could be written which would provide effective index/retrieval mechanisms for legal research on a multi-jurisdictional legislative data base. Development of such a data base and user-tailored software on an an in-house computer in conjunction with available system packages providing word concordance software, word processing software and general office management software could result in an Automated Juvenile Law Archive with substantial advantages over any time sharing system, including specifically, much lower and controllable recurring costs, faster system response, more effective and efficient index/retrieval mechanisms; unlimited update frequency to maintain the currency of the legislation; automated report generation capabilities; an automated legislative contact system including mailing list, legislative calendar, and update request letters; and accounting of system use, costs of use, and user fees, if any.

Following submission of the preliminary report and meeting with OJJDP staff, NCJJ was instructed to proceed with the development of system specifications for implementation of the Automated Juvenile Law Archive on an in-house computer at a cost not to exceed $200,000. System specifications and implementation cost estimates are set forth below. In addition, recommended resource allocations for maintenance, operation and enhancement of the Automated Juvenile Law Archive are provided.

IV. SYSTEM OVERVIEW

The Automated Juvenile Law Archive must be an effective legal research tool for use by attorneys experienced in juvenile code research and those working under their supervision. It would not be an artificial intelligence system capable of interpreting juvenile legislation and providing ultimate answers to questions of statutory interpretation without the intervention of the legal expertise of an experienced attorney. Accordingly, the data base need not be accessible to, nor the research software operable by, the layman. Use of the Archive data base would be through the experienced legal staff of the Archive. Therefore, automation should also be effectively employed to facilitate the rapid and efficient dissemination of research results.

Since the system is to be used by experienced legal researchers, it should be designed to take advantage of the traditional research tools and methods which an experienced attorney employs in comparative legislative analysis, enhancing these tools with the speed which automation can offer and supplementing them with other techniques peculiar to automation technology. The system should also be designed to improve the efficiency and the reliability of the processes for maintaining the archive of legislation. And perhaps most importantly, the system should be designed to take maximum advantage of every research inquiry to continue to improve the efficiency, accuracy, speed, capacity and quality of the system.

An experienced legal researcher begins comparative legislative analysis by seeking secondary references--law review articles, prior analyses,etc--which may provide a starting point for the research on the issue by referencing relevant sections of the law in all or many states as of the date that the author conducted his research. In the absence of such a starting point in the legislation of any state, the researcher will employ the state's topical index to its legislation, referring to sections listed under relevant topics in the index, following a trail of cross-references included in the text of a section or the annotations that may accompany it, and referring back to the topical index as needed to seek additional references under other topic headings.

The Automated Juvenile Law Archive should be designed to make maximum use of these same research techniques to facilitate rapid retrieval of relevant statutory material by capitalizing on the prior investment of time and energy embodied in the secondary sources, state topical indices, and legislative cross-referencing. The system should also be designed with appropriate feedback loops which permit the system to preserve and make maximum future use of all research inquiries.

Four data bases should be used to define the present status of juvenile legislation on a national level. The primary data base for the system would contain the current legislation from each of the respective jurisdictions. In addition to the current legislation data base, a history data base of recently amended versions of current legislation should be maintained. Two other data bases would provide information concerning future changes that will affect the primary data base. A Future Legislation Received Status data base would indicate whether any legislation has been received from a jurisdiction that

affects a document residing on the primary data base. This file would be used to alert the user that legislation not yet on-line has been received from a state and may affect legislation on the Current Legislation file or that legislation has been enacted which will take effect at a date in the future. Such new legislation would be stored on a Future Legislation data base until its effective date indicates that it should be moved to Current Legislation.

The current legislation data base would be composed initially of approximately 6500 documents where each section of state legislation is stored as an individual document. The History and Future Legislation files would be smaller, although the History file will continue to grow as legislation is amended until on-line storage limitations require archiving of old legislation.

Access to the legislative material stored on-line should be provided through four indexing mechanisms:

1. Document Number Indexing
2. Question-Answer Indexing
3. State Topic Indexing, and
4. Word Concordance Indexing.

Document number indexing would allow retrieval of legislation by referencing a normalized form of the statutory citation. This index not only permits the user to retrieve a particular section of legislation by its citation, but provides the link between other indexing mechanisms and the documents stored in the data base.

The primary index-retrieval mechanism for comparative legislative analysis should be Question-Answer indexing. It allows the researcher to take advantage of the results of previous research by maintaining a file of all previous research questions addressed, the statute references in each state which answered the question, and notes regarding the source of the information, e.g. author, title, date, quality, methodology etc.

Topic indexing utilizes the states topical index and associated section references. Solution sets of on-point documents are derived from the references and, if desired, cross-references from referenced sections. This would be the secondary research mechanism, employed when no previous inquiry or secondary source afforded a more effective retrieval by Question-Answer indexing, or to fill in gaps in a Q-A listing derived from a less than comprehensive analysis of all jurisdictions.

The last system retrieval tool, word indexing, would provide an access mechanism to legislative documents through any non-trivial word used in the statute. This is an indexing mechanism peculiarly suited to the technology of automation and essentially unavailable in library research. Although, as discussed in the state of the art analysis, this indexing mechanism is not

sufficient for effective research on a multi-jurisdictional legislative data base, it has unique potential for identifying those states which employ particular words or phrases in their legislation which may be of special research interest, e.g. "Family in Need of Supervision," "Youthful Offender," "Family Court," etc.

Relevant documents retrieved during a session should be saved on a system solution set. The defined solution set should be useable as the basic input for the final research analysis, as the primary support material for report generation, and as a building block in the expansion and enhancement of the primary retrieval mechanism--the Question-Answer Index. The system should have the capacity to convert data processing documents to word processing documents. Editing of complete documents until only the on-point portions remain would be accomplished with the vendor supplied word processing software, which would also be used to generate the accompanying report narrative.

V. FUNCTIONAL REQUIREMENTS

5.1 Data Storage Requirements

1. The system must be capable of storing on-line the current juvenile or family codes of 57 different jurisdictions, estimated at 6500 documents totalling 15 million characters.

2. Historical records of repealed or amended legislation for a 5-year period should also be maintainable on line.

3. A future legislation status file should indicate for each state whether any legislation has been received affecting the current legislation and whether it is presently available on-line or off-line.

4. A future legislation data base should store all legislation without a current effective date in on-line retrievable form.

5. A transactional data base should preserve an audit trail of all transactions that update the other data bases.

6. Storage capacity of the system should be expandable to permit future expansion of the data base to include related legislation and other relevant material.

7. The system should have the capability to archive material from any system data base to mag tape.

5.2 Application Software Requirements

-- Document Retrieval Functions --

1. The system should be capable of defining a Session Solution Set at the beginning of each research session.

2. The system should be capable of adding or deleting a document or a set of documents from the Session Solution Set.

3. Legislation should be retrievable by document number where each section of juvenile legislation denotes a document.

4. Legislation should be retrievable by words used in the document.

5. Legislation should be retrievable through each state's topical index document references.

6. Results of previous research efforts should be on-line retrievable in the form of questions and a corresponding solution set of on-point documents.

7. Capability should exist to perform various algebraic operations on any defined solution sets and to sort the resulting solution set by document number. Available algebraic operations should include:

   - union of two solution sets,

   - intersection of two solution sets,

   - subtraction of two solution sets, and

   - addition or deletion of a document from the solution set,

8. Boolean 'and' 'or' capability should be definable for word index retrieval of documents.

9. The system should be capable of switching easily back and forth between retrieval modes and remembering the last document reference.

10. The system should be capable of retrieving documents from any of the system data bases.

11. The system should be able to support access to next document or the previous document within a data base or solution set.

12. The system should be able to support moving within a document to next page or previous page.

13. The system should be capable of retrieving documents cross-referenced in a retrieved document and of storing cross-referenced documents in a secondary reference file.

14. The system should be capable of creating a secondary set containing all documents that have been cross-referenced in the primary set.

15. The system should be capable of creating a merged set of primary and secondary documents ordered by primary and then related secondary documents.

16. The system should be capable of moving within the topic index from one topic page to the next topic page or previous topic pages and of moving within the topic index to any alphabetic heading.

17. The system should be capable of defining a set of document references by specifying a topic line reference or positioning of the cursor.

18. The system should be capable of moving within the question-answer index to next question or previous questions.

19. The system should be capable of inquiring as to the status of any document with respect to the system data bases.

20. Creation of any solution set should alert the user to any documents identified in the solution set which do not exist on the current legislation file.

21. The system should have the capability to archive material from any system data base to mag tape.

-- Update Functions --

1. The system should be able to Add, Change, or Delete legislation on any system data base by controlled password access.

2. The system should provide control totals for both pre-update and post-update status.

3. All system update activity should provide a hard copy as well as store a recorded retrievable transaction description of the update.

4. The system should be capable of updating state topic indices utilizing the packaged word processing software.

5. The system should be capable of automatically updating the word index for data bases that have been changed.

6. The system should be able to automatically update the document index when the system data bases are changed.

7. The system should be able to automatically update the Question-Answer index at the end of a session with a defined question and referenced solution set.

-- Print/Display Functions --

1. The system should be able to define a temporary data base or set of documents that is the default choice for subsequent print/display commands.

2. The system should have the capability to print/display on-line data base contents either over a selected range or in its entirety. The selected range should be definable in terms of document number, state, date of legislative session, date of last update, entry date, or effective date.

3. The system should have the capability to print CRT screen contents on demand.

4. The system should be able to print/display the contents of an entire document on demand.

5. The system should be able to print/display selected fields of a document on demand.

6. The system should be capable of printing/displaying documents from any system data base.

7. The system should be capable of printing/displaying the question-answer index in short (questions only), annotated (questions and notes), or long (question, references, and notes) form.

-- Administrative Functions --

1. The system should have the capability of maintaining legislative status information for each jurisdiction concerning contact person, legislative session calendar, record of contacts, file of correspondence.

2. The system should have the capability of informing management of upcoming legislative sessions and generating correspondence directed to the appropriate contact in each state requesting any relevant amendment to legislation stored in the data base.

3. The system should have the capability of tracking research requests as to date of inquiry; origin of inquiry; anticipated form of reply--telephonic, correspondence, formal report; date of reply; form of reply; on-line search time required; and personnel time required.

4. The system should have the capability of generating management reports on system usage.

5. The system should have the capability to categorize requests to allow grouping of related inquiries.

6. The system should have the capability to automate inquiry responses.

5.3 Hardware Requirements

1. The system should have a minimum of 110 mega-bytes of peripheral storage expandable to 200 mega-bytes.

2. The system should have a minimum of 2 CRT's with at least 9 user definable function keys.

3. The CRT's should have a combined word processing data processing keyboard.

4. The system should have a 150 character per second line printer.

5. The system should have 1 mega-byte of core storage.

6. The system should have a 1600 bpi 9 track mag tape drive.

7. The system should have a letter quality printer.

5.4 Time Requirements

1. System response time in the retrieval mode should be no more than 2 seconds.

2. The system should be fully operational within six months.

VI. IMPLEMENTATION COSTS

Costs associated with implementation of the Automated Juvenile Law Archive can be broken down into five categories:

Initial Data Base Creation	---	$ 31,450
Computer Hardware & Packaged Software	---	$100,525
Custom Software	---	$ 36,200
Custom Indexing	---	$ 15,000
Administration	---	$ 16,825
		$200,000

The $31,450 figure for Initial Data Base Creation is based on the Westlaw Proposal (see Appendix A).

The Computer Hardware & Packaged Software cost is based on the purchase price of the system quoted by Wang (see Appendix B), including the options of the magnetic tape drive and VS Alliance Visual Memory. This configuration would meet the hardware requirements set forth in section 5.3. While Wang provides for both rental and lease of the equipment, the cost is very expensive; less than 2 years rent would exceed the purchase price.

The Alliance packaged software includes word processing, word indexing, and support of the administrative functions. The Custom Software cost reflects the determination of the project's technical consultant of the cost, at industry standard rates, for systems analyst and programmer time required to develop application software which in conjunction with the Wang Alliance package would fully satisfy the software specifications set forth in section 5.2 (see Appendix C).

Calculations of hardware and software costs were based upon Wang because more was known of the capabilities of the Wang software package to meet software requirements of the system, thereby permitting more accurate calculation of custom software requirements. Quotations were obtained from other vendors as well, but the available information on software packages available for the Digital Equipment and Barrister hardware was not sufficient to determine precisely what additional programming would be required to meet the software specifications of the system.

The Barrister/320 System Quotation (see Appendix D) would total $104,250 for hardware meeting the specifications of section 5.3. Barrister offers packaged software at a cost of $20,000 which would apparently support the word processing, word concordance, and administrative functions of the system and might reduce the cost for custom software if it could support other functions described in section 5.2 as well.

The Digital Equipment Corporation quotation (see Appendix E) totals $90,666, including the TS11-CA tape drive option, for hardware which meets the specifications in section 5.3. Word indexing software from a third party vendor would likely cost an additional $12,000 to $15,000 but additional features of the package might result in a reduction of custom software requirements and costs.

Custom Indexing costs include development of the initial Question-Answer index from available research reports, law review articles, etc., and conversion, processing and loading of the state topic indices.

Administrative costs involve project direction, management, accounting, etc.

VII. PROJECTED OPERATING COSTS

Until the Automated Juvenile Law Archive is in place and in use, until OJJDP policies regarding who may use it, for what purposes, at what cost, it is impossible to accurately predict the nature and extent of the use of the Archive or to project the cost of its continuing operation to satisfy the demand. The needs assessment, however, revealed a substantial level of continuing federal expenditures over the years for work which this resource is specifically designed to support, as well as a sustained demand for instantaneous and up to the minute information which has not been met because this resource was not available.

Recommended levels of federal funding for a five-year period to cover recurring costs of maintaining the system, annual expansion of the legislative data base, software enhancements which may be required in the first year, research use of the system to provide information to federal agencies and grantees, and administration of the Archive are provided below. The figure is based upon the premise that the substantial investment in implementation of the Archive warrants substantial support of the maintenance and use of such a valuable resource to insure the return on that investment. We recommend that if OJJDP proceeds with implementation of the Automated Juvenile Law Archive at a cost of $200,000, it should be prepared to support its maintenance and operation at a level of $100,000 per year. In addition, concededly arbitrary projections of costs which might be recovered from paying users of the Archive are presented.

Year	1	2	3	4	5
EXPENDITURES					
System Maintenance	$ 15,000	$ 20,000	$ 25,000	$ 30,000	$ 35,000
Data Base Expansion	10,000	10,000	10,000	10,000	10,000
Software Enhancement	5,000	---	---	---	---
Administration	20,000	25,000	30,000	35,000	40,000
Information Development and Dissemination	50,000	70,000	85,000	100,000	115,000
Total Expenditures	$110,000	$125,000	$150,000	$175,000	$200,000
REVENUE REQUIREMENTS					
Federal Support	$100,000	$100,000	$100,000	$100,000	$100,000
Cost Recovery	10,000	25,000	50,000	75,000	100,000
Total Revenues	$110,000	$125,000	$150,000	$175,000	$200,000

AUTOMATED JUVENILE LAW ARCHIVE

APPENDIX A

Proposal

National Center for Juvenile Justice

Private Data Base

Background

The National Center for Juvenile Justice (NCJJ) has a requirement for a private data base consisting of portions of state statutes relevant to juvenile justice administration and related matters. The data would be converted using hard copy from various sources, using the resources of the NCJJ and West Publishing Company to insure the latest copy for the initial data base. A flow of update source copy would have to be established for updates. Update frequency is yet to be decided, but it is likely to be quarterly or semi-annually.

Data Base Description

Individual records within the data base will be statutory sections (and possibly court rules), consisting of the following discrete fields:

(1) Citation (variable form, depending on state)

(2) Preliminary (after the form of the USC data base)

(3) Title Line (section number and section catch line)

(4) Section Text

(5) Comment Field (initially empty)

(6) History Field

(7) Normalized Section Number Field (of the form Title #, Ch#, Sec#)

(8) Normalized Section Cross Reference Field (of the form Title#, Ch#, Sec#, extracted from within text)

(9) Effective Date of Legislation

(10) "National Concept" Index Terms - see "Subject Matter Classification"

Cost Estimates

First Year

Initial Data Base Creation (one-time)

Analysis, Design and Set Up	NTE	$ 2,500	
Document Mark Up		1,500	
Data Conversion, processing and loading			
15,000,000 char x $1.83/1,000 char		$27,450	$31,450

File Maintenance (Annual)

Revisions at the rate of $0.50 per revised document			
7,500 documents x 10% of documents x $0.50		$ 375	
New or re-keyed documents at the rate of $1.83 per thousand characters			
1,500,000 char/year x $1.83/1,000 char		2,750	3,125

File Usage (Annual)

Annual usage estimated at 15 hours/month			
15 hours/mo x $45/hour x 12 months		$8,100	8,100
Total First Year Cost (Estimated)			$42,675

Second Year

Data Storage			
Initial Data			
15,000,000 @ 15¢/thousand		$2,250	
Data added during first year			
1,500,000 x 15¢/thousand x ½		125	$ 2,375
File usage			
20 hours/mo x $45/hr x 12 months		$10,800	10,800
Total Second Year Costs (Estimated)			$13,175

Data will be organized by state, so that the user may specify any state, all states or any combination of states to be searched. Unless otherwise specified by the searcher all fields should be searched.

Source Copy Mark Up Requirements

The most significant mark up requirement will be to meet the need for 'normalized' section number representation. The normalized form has tentatively been established as follows:

Title#, Chapter#, Section Number

Periodic File Maintenace Requirements

Revision copy will be submitted for the periodic updates, according to procedures to be defined. Revision of existing documents will be by "executing" corrected copy through West's text editor facilities, or by complete re-keying of modified documents, as appropriate in each instance.

Subject Matter Classification

The NCJJ is considering a requirement to create a subject matter classifications system and to have it applied to the individual documents (sections) prior to the keyboarding step. Because of their expertise in the subject matter, they would want to be deeply involved in the creation of the taxonomy and its application to the data base. Therefore such work would probably best take place at their offices in Pittsburgh.

AUTOMATED JUVENILE LAW ARCHIVE

APPENDIX B

INVESTMENT QUOTATION

THE NATIONAL CENTER FOR JUVENILE JUSTICE

QUANTITY	DESCRIPTION	PRICE	MONTHLY MAINTENANCE IF PURCHASE	1 YEAR RENTAL MAINTENANCE INCLUDED	5 YEAR LEASE MAINTENANCE INCLUDED
1	VS45-16A, 1024K Memory, 1.2MB DSDD Diskette, 34MB Fixed Disk, Fortran Compiler 32 Serial Ports	$32,000.00	$290.00/Month	$1,632.00/Month	$1,081.20/Month
1	2 Port Disk Device Controller - 22V50-2	4,000.00	40.00/Month	204.00/Month	139.20/Month
1	75MB Removable Disk Drive	17,000.00	160.00/Month	867.00/Month	580.80/Month
1	32K Serial Workstation	2,750.00	24.00/Month	231.00/Month	91.92/Month
2	Combined WP/DP 64K Workstation	9,800.00	48.00/Month	440.00/Month	287.04/Month
1	150/40 CPS High Density Matrix Printer	5,975.00	49.00/Month	281.00/Month	196.32/Month
1	VS Alliance Base Level*	10,000.00	N/C	470.00/Month	240.00/Month
		$81,525.00	$611.00/Month	$4,125.00/Month	$2,616.48/Month

F.O.B. Tewksbury Mass.

Quotation valid until May 31, 1983.

Sales Representative

INVESTMENT QUOTATION

THE NATIONAL CENTER FOR JUVENILE JUSTICE

QUANTITY	DESCRIPTION	PRICE	MONTHLY MAINTENANCE IF PURCHASE	1 YEAR RENTAL MAINTENANCE INCLUDED	5 YEAR LEASE MAINTENANCE INCLUDED
OPTIONS					
1	Magnetic Tape Drive, 9 Track, 1600 BPI, 75 IPS, 120KB Per Second	13,000.00	103.00/Month	663.00/Month	423.24/Month
1	VS Alliance Visual Memory**	6,000.00	N/C	282.00/Month	144.00/Month
1	Cobol Compiler	3,000.00	25.00/Month	153.00/Month	99.00/Month
1	Basic Compiler	3,000.00	25.00/Month	153.00/Month	99.00/Month
1	RPG-II Compiler	3,000.00	25.00/Month	153.00/Month	99.00/Month
1	PL/1 Compiler	3,000.00	25.00/Month	153.00/Month	99.00/Month

*Annual Usage Fee - $1,200.00
**Annual Usage Fee - $720.00
Delivery - 90 Days from receipt of order

F.O.B. Tewksbury Mass.

Quotation valid until May 31, 1983.

Mike Yolen

Sales Representative

AUTOMATED JUVENILE LAW ARCHIVE

APPENDIX C

CUSTOM SOFTWARE

System Analysis: 160 hours @ $35/hour	$ 5,600
Programming: 480 hours @ $25/hour	$12,000
Testing Individual Modules: 320 hours @ $25/hour	$ 8,000
System Integration: 160 hours @ $25/hour	$ 4,000
System Documentation: 80 hours @ $30/hour	$ 2,400
JCL Procedures: 80 hours @ $35/hour	$ 2,800
User Training: 40 hours @ $35/hour	$ 1,400
TOTAL:	$ 36,200

AUTOMATED JUVENILE LAW ARCHIVE

APPENDIX D

NATIONAL CENTER FOR JUVENILE JUSTICE
BARRISTER/320 SYSTEM QUOTATION

EQUIPMENT

MODEL	QTY.	DESCRIPTION	PURCHASE PRICE	MONTHLY MAINT.
122	1	Barrister Computer, including - 256KB Memory - Single Device Port - CPU/Disk Cabinet	$ 28,300	$ 365
645	2	Disk Drive, 74MB	29,000	390
605B	1	Disk Drive Controller	10,000	70
206	1	Eight Device Controller	4,500	45
236	2	Visual Display Terminals	6,000	60
547	1	Letter Quality Printer, 45cps	4,800	35
528B/501	1	200cps Matrix Printer with controller	4,650	60
		EQUIPMENT TOTAL	$ 87,250	$ 995

NATIONAL CENTER FOR JUVENILE JUSTICE

SOFTWARE

MODEL	DESCRIPTION	ONE TIME LEASE	PROGRAM MAINT.
1020	Extended Operating System	N/C	$ 70
1100	Word Processing Program	N/C	75
1512	Information Management, Level II	$ 20,000	120
	SOFTWARE TOTAL	$ 20,000	$ 265
	BARRISTER/320 SYSTEM TOTAL	$ 107,250	$1260

TRAINING

Word Processing	52 hours @ $25.00/hr.	1,300
Information Management	24 hours @ $25.00/hr.	600
TRAINING TOTAL		$ 2,000

OPTIONAL EQUIPMENT

800/1600 BPI Magnetic Tape Drive, 9 Track	$ 17,000	$ 150

APPENDIX E

digital

DIGITAL EQUIPMENT CORPORATION

PHONE: AC 617 897-5111 TWX: 710-347-0212-CABLE: DIGITAL MAYN, TELEX: 94-84-57

QUOTATION

QUOTATION NUMBER 8301QN0178
DATE 24-Feb-83
PLEASE REFER TO THIS QUOTATION NO. IN ALL CORRESPONDENCE AND ORDERS

QUOTATION EXPIRES: 25-Apr-83
REFERENCE:

DISCOUNT AGREEMENT NO.: NONE
WHICH EXPIRES: 25-Apr-83

TO:
National Ctr for Juvenile Just
701 Forbes Avenue
Pittsburgh , PA 15222

Attn: Mr. Mike Monkelis

FROM:
P. WILSON
Digital Equipment Corporation
339 Haymaker Road
Monroeville PA 15146

Thank you for your inquiry, we are pleased to quote as follows

ITEM	QTY	MODEL NUMBER AND DESCRIPTION	TERMS	DIS %	UNIT PRICE	NET AMOUNT
1	1	SV-CXWMA-CA 11730 QC001-AH LA120 120/60 Monthly Field Service Maintenance = $432.00 Monthly Software Maintenance = $260.00	0	PK	$59,400.00	$59,400.00
2	2	VT102-WA VT102-AA WRD PROC/DECWORD KBD Monthly Field Service Maintenance = $52.00	0	0	$1,575.00	$3,150.00
3	1	LA100-ZA YA W MULTIPLE FONT OPTION Monthly Field Service Maintenance = $33.00	0	0	$2,690.00	$2,690.00
4	1	QC100-AG VAX-11 FORTRAN SV TU58 Monthly Software Maintenance = $44.00	0	0	$8,700.00	$8,700.00

Subtotal	$73,940.00
Insurance	$326.20
NET TOTAL AMOUNT	$74,266.20
Total Dec Service Maintenance Charge Type 5 Day 8 Hour	$517.00
Basic Software Maintenance	$304.00
Training Credits	5

Each training credit, valid for twelve months from the date of issue, redeems one week (or fraction) of training for one student.

Options: 1Mb Add-On Memory: $9,000
TS11-CA: $16,400; (4) VT102-WA: $6,300

digital

DIGITAL EQUIPMENT CORPORATION

PHONE: AC 617 897-5111 TWX: 710-347-0212-CABLE: DIGITAL MAYN, TELEX: 94-84-57

QUOTATION

QUOTATION NUMBER 8301QN0178
DATE 24-Feb-83
PLEASE REFER TO THIS QUOTATION NO. IN ALL CORRESPONDENCE AND ORDERS

QUOTATION EXPIRES: 25-Apr-83
REFERENCE:

DISCOUNT AGREEMENT NO.: NONE
WHICH EXPIRES: 25-Apr-83

This quotation shall remain firm for 60 days from the date hereof, unless modified in writing by Digital Equipment Corporation prior to our acceptance of your contract offer. This quotation is subject to credit approval and is governed by the Digital Equipment Corporation Standard Terms and Conditions of sale appearing on the reverse hereof and/or the terms as noted above and attached hereto.
Any contract resulting from the quotation must be accepted at DIGITAL's corporate offices by a duly authorized representative of Digital Equipment Corporation. Insurance will be provided on property while in transit and a charge of $.50 per $100.00 of equipment valuation will be made unless instructions to the contrary are clearly stated on the face of the purchaser's order.

Quotation Prepared by P. WILSON

END