

PROJECT ADMINISTRATION DATA SHEET

ORIGINAL  REVISION NO. \_\_\_\_\_

Project No. D-48-804 (T5115-0A0) GTRC/~~GI~~ DATE 8 / 2 / 85

Project Director: T. Bradshaw School/~~Lab~~ Architecture

Sponsor: Ga. Division of Rehabilitation Services

Type Agreement: Contract #427-93-50716

Award Period: From 6/29/85 To 11/30/85 (Performance) 12/10/85 (Reports)

Sponsor Amount: This Change Total to Date

Estimated: \$ \_\_\_\_\_ \$ 50,000

Funded: \$ \_\_\_\_\_ \$ 50,000

Cost Sharing Amount: \$ N/A Cost Sharing No: N/A

Title: Core Support for Center for Rehabilitation Technology

ADMINISTRATIVE DATA

OCA Contact John Schonk x4820

1) Sponsor Technical Contact: \_\_\_\_\_ 2) Sponsor Admin/Contractual Matters: \_\_\_\_\_

Joe Patrick

Dept. of Human Resources

Div. Rehabilitation Services

878 Peachtree St., NE

Atlanta, GA 30309

894-6716

Defense Priority Rating: N/A Military Security Classification: N/A

(or) Company/Industrial Proprietary: N/A

RESTRICTIONS

See Attached N/A Supplemental Information Sheet for Additional Requirements.

Travel: Foreign travel must have prior approval - Contact OCA in each case. Domestic travel requires sponsor approval where total will exceed greater of \$500 or 125% of approved proposal budget category.

Equipment: Title vests with Sponsor

COMMENTS:



Continuation of D-48-616

COPIES TO: \_\_\_\_\_ SPONSOR'S I. D. NO. 02.300.000.85.014

Project Director Procurement/GTRI Supply Services GTRC  
Research Administrative Network Research Security Services Library  
Research Property Management Reports Coordinator (OCA) Project File  
Accounting Research Communications (2) Other A. Jones

SPONSORED PROJECT TERMINATION/CLOSEOUT SHEET

80324

Date 5/22/86

Project No. D-48-804

School/~~Lab~~ Arch. \_\_\_\_\_

Includes Subproject No.(s) N/A

Project Director(s) Tony Bradshaw

GTRC / ~~GIF~~

Sponsor Ga. Division of Rehabilitation Services

Title Core Support for Center for Rehabilitation Technology

Effective Completion Date: 2/28/86

(Performance) 3/10/86

(Reports)

Grant/Contract Closeout Actions Remaining:

- None
- Final Invoice or Final Fiscal Report
- Closing Documents
- Final Report of Inventions-Sent Patent Questionnaire to P.I.
- Govt. Property Inventory & Related Certificate
- Classified Material Certificate
- Other \_\_\_\_\_

Continues Project No. D-48-616

Continued by Project No. \_\_\_\_\_

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YEARLY REPORT  
DHR CONTRACT #427-93-50716  
Georgia Tech Contract D48-804  
7/1/85 - 2/25/86

CORE STAFF: CRT provides a core staff of four positions.  
Director - Richard L. Martin  
Technical Coordinator - A. J. Bradshaw  
Information Specialist - Sarah Endicott  
Computer Specialist - Irwin Boeckler

TECHNICAL SERVICES: CRT continues to provide a program of services that identify, design, develop and test prototype devices and adaptive equipment. During the period of this contract, CRT has been involved in design projects ranging from portable reading machines for the visually impaired to mouthswitch controls for the mobility impaired. In addition, CRT has provided computer/software support for DRS clients, has conducted feasibility studies relating to the handicapped, and has completed numerous evaluations of handicapped clients needing solutions to problems related to performing effectively on the job and independently in the home.

Because of the quantity and scope of requests for technical services this year, CRT has expanded its production capacity. A workshop for the construction of prototype devices and equipment was created and equipped to accommodate technical services requests.

Product Development: CRT has been involved in the following product development projects.

1. Project: reading machine for visually impaired. CRT has recently completed the design of a reading machine for the visually impaired for DRS client Kea Strozier. The reading machine combines a manual optical character recognition system with a voice synthesizer to encode typewritten material into synthesized speech. The design scheme incorporates a hand-tracked OCR system with a voice synthesizer to provide the user with a practical, quick method of scanning and reading print by hand. Because the project client's job is related to finance and budget, the hand-tracked system was designed specifically to accommodate spread sheets and other types of office memoranda and

communications that integrate verbal text with lists of numbers. Work was continued under this contract after the depletion of funds from A & I V-023134.

2. Project: foot-to-hand control converter. In January, CRT completed the design of a foot-to-hand control converter for client Susan Susko, a stenographer whose back problems conflicted with the operation of the foot pedal on her dictaphone. CRT duplicated the foot pedal function with small depression type switches (one toggle and two constant pressure) in an enclosure that can be positioned by the user either on a keyboard or a table adjoining the typewriter and operated manually.

3. Project: mouthswitch control. CRT has completed its evaluation of a mouthswitch control to operate an environmental control system and a computer aided design system for DRS client Larry McAfee, who is profoundly quadraplegic as a result of a C1-2 level spinal cord injury. Design and development work is continuing under a separate DRS A & I for Larry McAfee.

4. Project: product search for and modification of specialized walker. CRT conducted a product search for DRS client Leigh Anderson who is blind and suffers from cerebral palsy. Because she required the use of two walking canes for mobility, the client was severely restricted in her ability to transfer items from place to place, particularly food items from the stove to table, etc. CRT conducted its search of walkers recognizing that the client was quite weak and could not push much weight. The result of our search was the "Buddy Safety Roller" which, when evaluated by CRT along with the client, was found to be acceptable if modified. The walker was ordered, received and modified by decreasing the width 3 inches. CRT also designed and developed a carrying tray which was attached to the front of the walker and which made transfer of items easier for the mobility impaired client. Finally, the modified walker and tray were evaluated when used in the home by the client. The product was determined to be effective in solving the client's transfer problem.

5. Project: design and development of writing aid. DRS client Randy Wilson, who is wheelchair-bound and who suffers from weakness in his arms and has little use of his hands, needed a more effective way to perform the writing tasks required of him by his job as a dispatcher. CRT evaluated the client to find a way for him to log dispatch calls more quickly and easily. As a result of the evaluation, CRT designed and developed a writing aid which holds a pencil upright at an angle comfortable for the client, is in ready writing position, and is freestanding on the writing tablet so that he can listen to dispatch calls and write at the same time.

6. Project: design for a receptionist's station for a wheelchair-bound client. DRS client David Mapp has been diagnosed to have osteogenesis imperfecta and his small size,

caused by this disorder, resulted in his having some difficulties on the job as a receptionist and switchboard operator at the Atlanta Rehabilitation Center. The furniture in use at the switchboard was too tall for David to see and be seen over and interfered with comfortable and efficient use of the equipment. After evaluating the situation, CRT devised an adjustable, work-space arrangement composed of two wings: one wing for normal sized employees and one for the client. The design includes a carousel message center which is easy to access and use. It also incorporates a lockable drawer for postal meter machines. The workstation is currently being constructed at the Atlanta Rehabilitation Center.

7. Project: design of workstation for quadraplegic client. Preliminary design work on a workstation for quadraplegic DRS client Phil Payne is underway. The workstation, to be located at DRS headquarters, will be constructed and installed on a separate DRS contract.

8. Project: design and development of a model workstation in the lobby of Georgia Hall. Design studies for this workstation are underway at this time.

9. Project: Evaluation of site needing wheelchair access. DRS client Roger McHugh, who is restricted to a wheelchair, was having difficulty getting in and out of his place of employment. CRT was requested to evaluate the situation and to recommend ways to resolve the problem. After visiting the site and evaluating the client's needs, CRT determined that three possibilities existed for remediation of the problem: (1) A small asphalt ramp could be constructed at the entrance to the building in which the client worked. (2) A porch lift could be attached to a loading dock at the rear of the building. (3) A concrete ramp could be constructed at the location of the loading docks, and remote control switch could be used to activate the dock door. Under this scheme, vehicles could drive into the building. CRT considers the entry ramp scheme to be most cost effective for the employer; however, the dock ramp scheme would not only aid the DRS client but would also be an improvement to the building itself since the transfer of materials in and out of the building is essential to this company. The rear ramp proposal would provide convenient, in-house transfer and eliminate any problems connected with loading in inclement weather.

Computer Applications: The Technical Services division of CRT has also been involved in the following computer application projects.

10. Project: feasibility study on Enable Software package. In February, CRT completed a feasibility study investigating the possibility of implementing the Enable Software speech package in a DEC environment for DRS client Joe Ellen Busch. Recommendations for equipment and software have been made. When all

material is in place, CRT will make arrangements to act as a consultant for start-up and operation.

11. Project: on-site evaluation of visually disabled client. The advantages of using a PC with a speech package and using WordStar in word processing were discussed with DRS client, Janet Carter. All support materials have been delivered and CRT's speech synthesizer has been sent to the client along with VR's DecTalk unit.

12. Project: evaluation of visually impaired client's job-related computer needs. CRT conducted an evaluation of DRS client Martha Mariani to investigate the possibility of her employment as a text processor/receptionist. Because the client suffers from retinitis pigmentosa, she cannot see well enough to perform word processing skills. A preliminary examination showed that a medium-resolution color monitor would adequately support the functional requirements of enhancement to vision. It was recommended that a microcomputer-based capability for task performance be implemented if the client is to establish any professional standing as a word processor and is to maintain job competitiveness. As for present employment, a microcomputer would serve as an easily implementable link to any possible comprehensive upgrade to the employer's data processing scheme. The client has been given promotional literature on the Vista Enlargement System and a comprehensive article on word processing programs.

13. Project: feasibility study for employing the visually disabled at ATLANTA JOURNAL CONSTITUTION. CRT is working with the subscription department supervisor of the ATLANTA JOURNAL-CONSTITUTION on a possible program to hire visually impaired individuals in the newspaper's subscription department. The positions in subscriptions consist of operation of a ROLM 400 telephone set and transaction processing on a terminal ultimately linked to a CICS-based system running on an IBM 3084 mainframe. Job details are extensive, with normal job training taking 55 hours of formal, in-house instruction. To implement such a program, the telephone set would need to be adapted to auditory cues. To the best of our knowledge nothing exists on the market currently on this scale, but we are fully capable of developing an appropriate product. A description of the telephone set in project form has been forwarded to the Robotics and Instrumentation Lab for evaluation.

14. Project: product search for character magnification systems. The character magnification system implemented in the software being used by DRS client, Donna Flowers, was being cancelled by hardware interrupts to the monitor by custom screen menus in proprietary software. The company was very reluctant to open their software for modification. CRT coordinated a product search and found that the VISTA System by TeleSensory implemented the character magnification system in hardware outside of the

motherboard. As of January 10, 1986, the system was being considered by client's VR counselor. Also the client's sponsor, Georgia Computer Programming Project, has received a complimentary copy of the VISTA system for evaluation and testing.

**DATA BANK:** CRT has continued to operate a data bank that collects and disseminates information on adaptive equipment, products and services for handicapped and disabled persons. This information service, called Techknowledge, is staffed by an Occupational Therapist and provides information about the disabled and related topics to institutions and professionals, as well as the general public. Articles on disabilities, product information, addresses, plans and patterns for equipment, statistics, accessibility guidelines, and State and Federal rules and regulations are only a few of the areas in which information is available. In addition, CRT subscribes to a number of newsletters and publications relating to the handicapped. A small, but growing library is maintained. Access to a number of computer databases is available. This service is made available free of charge to all DRS counselors on an on-call basis.