

GEORGIA INSTITUTE OF TECHNOLOGY  
OFFICE OF CONTRACT ADMINISTRATION  
SPONSORED PROJECT INITIATION

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add

Date: May 31, 1976

Project Title: Development of "Cable-Lert" System Subassemblies

Project No: A-1839

Project Director: Mr. E. E. Donaldson

Sponsor: Twenty-first Century Systems, Inc.; Decatur, Alabama 35601

Agreement Period: From 4/20/76 Until 7/19/76

Type Agreement: Std. Ind. Agree. dated 4/12/76

Amount: \$15,032

Reports Required: Monthly status reports; Final Report.

Sponsor Contact Person (s):

Technical Matters

Contractual Matters

(thru OCA)

Mr. John Weimer

Ms. Elaine A. Duncan

Twenty - first Century Systems, Inc.  
P. O. Box 1536  
Decatur, Alabama 35601  
Phone: (205) 350-1121

Defense Priority Rating: None

Assigned to: Electronics Technology (~~School~~/Laboratory)

COPIES TO:

- Project Director
- Division Chief (EES)
- School/Laboratory Director
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- Project Code (GTRI)
- Other \_\_\_\_\_

GEORGIA INSTITUTE OF TECHNOLOGY  
OFFICE OF CONTRACT ADMINISTRATION  
SPONSORED PROJECT TERMINATION

*no action  
ADL  
DHL*

Date: 1/10/78

Project Title: Development of Cable-Lert Systems Subassemblies.

Project No: A-1839

Project Director: E. E. Donaldson

Sponsor: Twenty-First Century Systems, Inc.

Effective Termination Date: 1/31/78

Clearance of Accounting Charges: 1/31/78

Grant/Contract Closeout Actions Remaining:

- Final Invoice and ~~ACCOUNTING DOCUMENTS~~
- Final Fiscal Report
- Final Report of Inventions
- Govt. Property Inventory & Related Certificate
- Classified Material Certificate
- Other \_\_\_\_\_

Assigned to: Electronics Technology (School/Laboratory)

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A-1839

ENGINEERING EXPERIMENT STATION  
GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

27 May 1976

21st Century Inc.  
P.O. Box 1536  
Decatur, AL 35601

Attention: Mr. John Weimer.

Subject: Progress Report No. 1, Ga. Tech Project A-1839  
Covering time period: 20 April - 20 May, 1976  
"Development of Cable Alert System Subassemblies"

Gentlemen:

Since the project initiation on 20 April, 1976, efforts have been directed to the completion of the first four (4) of the seven (7) tasks outlined in the research proposal. Specifically, these first four tasks are (1) Design Review, (2) Parts Selection and Procurement, (3) Subsystem Design and Test, and (4) Subsystem Integration and Test.

A review of the functional design characteristics of the Control System and All-Channel Generator subassemblies was conducted. The final system design will be essentially the same as originally planned with only minor modifications. These modifications are primarily concerned with alternate choices for devices used in specific subassemblies as opposed to a system redesign. As an example, an active 3 kHz lowpass filter will be used to replace the passive filter planned in the original system. Also, the original system design called for a channel selector, video IF module and audio IF module manufactured by Zenith Corporation. These units have been replaced by units manufactured by RCA, primarily because the RCA versions are better suited from a circuit board mounting standpoint for integration into the Cable Alert System.

Parts selection for the two subassemblies is essentially complete and the majority of the parts are on order. Every effort is being made to ensure fast delivery on all parts by contacting many vendors and ordering from only those that have the required parts on-hand.

The critical portions of the Cable Alert System have been bread-boarded and tested, including the channel generators and the active lowpass filter. In addition, the time delay relays, the tone oscillators, and the tone controlled relays have been tested for proper operation and for DC power requirements.

Progress Report No, 1

27 May 1976

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At present, efforts are being directed to completion of parts acquisition and to layout of the printed circuit boards. It is expected that the printed circuit board layout will be completed in about a week to ten days.

Respectfully submitted:

E. E. Donaldson, Jr.  
Project Director, A-1839

Approved:

D. W. Robertson, Director  
Electronics Technology Laboratory

EED/aja

A-1839

ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

20 July 1976

21st Century Inc,  
P.O. Box 1536  
Decatur, AL 35601

Attention: Mr. John Weimer

Subject: Progress Report No. 2, Georgia Tech Project A-1839  
"Development of Cable Alert System Subassemblies"

Gentlemen:

As of this date, the design and fabrication of the Control System and All-Channel Generator Subassemblies is essentially complete. With minor exceptions, components and subsystems have been fabricated in final form on printed circuit boards and performance tests have been performed to assure the subassemblies are functioning properly. Also, the mechanical layout and fabrication of the two subassembly chassis have been completed.

The completion and final testing of the two subassemblies has been delayed by delays in the delivery of parts. A number of capacitors, diodes, and potentiometers have not been received, and it is understood that the coaxial relays on order by 21st Century Systems are presently not due to be delivered until around 1 September 1976.

In order to check the operation of the two subassemblies, it is planned to use substitute parts and/or temporary circuit modifications until the desired parts are delivered. This approach will permit the majority of circuit alignments and checks to be completed and the overall operation of the subassemblies to be verified. Once the necessary parts are received, the subassemblies will be completed and subjected to final tests prior to delivery.

Respectfully submitted:

E. E. Donaldson, Jr.  
Project Director, A-1839

Approved:

D. W. Robertson, Director  
Electronics Technology Laboratory

EED/aja



## ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

13 January 1977

Twenty-First Century Systems, Inc.  
P. O. Box 1536  
Decatur, Alabama 35601

Attention: Mr. John Weimer

Subject: Bi-monthly Progress Report No. 1, Project A-1839 (Mod 3),  
covering the time period from 15 October 1976 to 15 December  
1976, "Development of the Cable-Lert System Subassemblies"

Gentlemen:

During the past two months, the project efforts have been directed to: (1) acquisition of materials and supplies required for fabrication of the various subassemblies; (2) design of the T7/T9 converters and channel selectors; and (3) design of the HOWAL receivers.

The majority of materials and supplies required for fabrication of the various subassemblies have been ordered, with a large portion of the items received at this time. The major items yet to be ordered are those needed for fabrication of the Audio Only Generator. These components will be ordered as the Audio Only Generator design is finalized.

The T7/T9 channel selector has been designed and fabricated with the exception of the crystal controlled local oscillator. The crystals required to finalize the channel selector design were received only recently and as a result have yet to be incorporated in the design. Inclusion of the crystal controlled oscillator is expected to occur during the next several weeks.

The design of the T7/T9 channel generator is nearing completion with fabrication and testing to follow. No major problems in obtaining the desired performance characteristics is expected.

A prototype HOWAL receiver has been designed and fabricated. The present design consists of a preselector tuned to 132 MHz followed by a FET mixer which, in turn, is driven by a crystal controlled local oscillator producing a 10.7 MHz IF signal. The IF amplifier consists of four (4) stages using low cost bipolar transistors and fixed tuned ceramic bandpass filters. In the low cost version of the HOWAL receiver, an unmodulated carrier at 132 MHz will activate the HOWAL alarm. Additional security through a code modulated 132 MHz signal can be added to the basic receiver design where required. Consideration is also being given to a non-crystal controlled local oscillator to reduce system cost. In addition, consideration is being given to an integrated circuit approach

Bi-monthly Report No. 1  
13 January 1977  
Page 2

for the IF amplifier. The integrated circuit approach is being considered from both a parts and assembly cost standpoint as compared with the present discrete approach.

During the coming period, the project emphasis will be directed to finalizing the design on the T7/T9 converters and channel generator and the HOWAL receiver. Emphasis will also be placed on the operational concept and design of the Audio Only Generator.

Respectfully submitted,

E. E. Donaldson, Jr.  
Project Director, A-1839

Approved:

D. W. Robertson, Director  
Electronics Technology Laboratory

EED:phb