

Minutes from the Meeting of the SDI-12 Support Group's Technical Committee
November 6, 2000
Miami, Florida

Present at the Meeting:

Mike Jablonski, NR Systems, Inc.
Mike Alkier, Hydrolab Corporation
Bill Davies, U.S. Geological Survey (HIF)
William P. Thomas, Amass Data
Jerry Calhoun, Sutron Corporation
Jan Matthews, Druck, Inc.
Paul-Emile Bergeron, Environment Canada
Joe Thurston, Campbell Scientific, Inc.

Jerry Calhoun, Chairman of the Technical Committee, called the meeting to order at approximately 8:30 A.M. A four hour technical discussion followed.

RT Requirement

The Technical Committee reviewed the RT/Impedance requirement. It was felt that although the requirement is sufficient, it may need clarification. Joe said that only thing missing from the specification about this requirement is capacitance loading of the data bus. Jerry Calhoun asked if the specification should specify leakage current. Jerry expressed his opinion that the SDI-12 Specification should have a new paragraph to explain Figure 2.0, Equivalent Circuit, on page 4 of the spec.

Proposed S Command

A long discussion followed about the proposed new command, which is proposed to return identification and setup information from sensors. This command was called the S command in the fall/2000 newsletter. The following conclusions were reached:

- 1) the proposed new command has merit;
- 2) the proposed command is to be for a user; it must not to place any new requirements on data recorders;
- 3) SDI-12 data recorders are not required to store or otherwise use the results from the new command;
- 4) at a minimum, a sensor must return the manufacturer, model number, and firmware version in response to the new command;
- 5) the new command will be called the Query Setup command;
- 6) the command will be a?n!, rather than a?Sn! as first proposed;

After much discussion the following details for the new command were worked out:

The format of the proposed command is:

a?n!

where:

a is the SDI-12 address;

? is the command;

n is a setup value (e.g. the nth value) to get from the sensor; this can range from 1 to as many setup values that can be retrieved from the sensor.

The sensor would return identification information and setup information. The identification information is for documentation and includes information such as the sensor name, model, serial number, firmware version, and any other information deemed useful for identifying the sensor and its configuration. The setup information would include all parameters that can be set by the user.

In response to an S command the sensor would return:

a<space> <text><CR><LF>
or
a+<sdi-12 value><CR><LF>
or
a-<sdi-12 value><CR><LF>
or
ax<CR><LF>
or
a<CR><LF>

Where:

a is the address of the sensor

And:

the second character after the address indicates the format of the information to follow:

a space () means that text information follows

a plus sign (+) or a minus (-) sign indicates that numeric information follows

a digit indicates (x) that x amounts of seconds must pass before any information is ready

a<CR><LF> means that there is no nth setup item to return in response to the command

And:

<text> contains text about the sensor's setup information (up to 35 characters)

<sdi-12 value> contains numeric data in the normal format of an sdi-12 data value

when x amounts of seconds must elapse before the setup information is ready, the command, a?D! is used to get the setup information. The a?D! command used in the same way the aD! command is used. (a?D! is also a proposed new command to add to SDI-12)

The technical committee agreed to document the Query Setup command in the next SDI-12 Support Group newsletter and to have the membership vote on it. Under the bylaws of the group, a two-thirds majority of members returning ballots is needed to change the specification.

Differential SDI-12

The next topic that was discussed was differential SDI-12. Jerry Calhoun reported that a schematic for a differential RS-485/SDI-12 circuit that was worked out at a prior meeting of the technical committee has termination and transient protection problems.

Jerry listed several things about a possible differential SDI-12 specification

- reference to another signal, instead of ground;
- common mode rejection;
- longer cables;
- same timing at 1200 baud
- different timing at a faster baud rate, but break and dead time on the data line should remain the same;

Joe Thurston added that he thought 9600 baud would be fast enough and that the group should consider using the SDI-12 protocol over RS-485 transceivers.

Action Items

The meeting concluded with the assignment of the following actions items:

- 1) Mike Jablonski - put the new Query Setup command into writing (by January 15, 2001)
- 2) Jerry Calhoun, Mike Alkier - better describe RT, impedance (by February 1, 2001)
- 3) Jerry Calhoun- write a short description of differential SDI-12 at 9600 baud, feasibility, general approach, etc. (By February 1, 2001)

The group decided to place all three of the above descriptions into the next SDI-12 newsletter. The description of the Query Setup command (if accepted by the membership) and the improved description of RT, impedance will be placed into a new version of the SDI-12 specification (Version 1.4).

For the third action item (differential SDI-12), a newsletter article would ask the membership for help and direction on this. The objective is to determine if the Technical Committee should proceed on this item.

Minutes from the General Meeting of the SDI-12 Support Group
November 7, 2000
Miami, Florida

Present at the Meeting:

Mike Jablonski, NR Systems, Inc.
Mike Alkier, Hydrolab Corporation
Bill Davies, U.S. Geological Survey (HIF)
Hans-Peter Vaterlaus, Rittmeyer
William P. Thomas, Amass Data
Jerry Calhoun, Sutron Corporation
Jan Matthews, Druck, Inc.
Debra Flynn, In-Situ, Inc.
Paul-Emile Bergeron, Environment Canada

Motions from the meeting:

- 1) Increase Dues from \$120.00 per year to \$200 per year

motion made by Mile Alkier
motion seconded by William Thomas
motion passed

- 2) Reinstate the technical committee for another year

motion made by William Thomas
motion seconded by Bill Davies
motion passed

- 3) motion to keep a person from the South Florida Water Management District on the technical committee

motion made by Mile Alkier
motion seconded by Jerry Calhoun
motion passed

- 4) motion to appoint Mike Jablonski as the Chairman of the Support Group for another one year term

motion made by Jerry Calhoun
motion seconded by Jan Matthews
motion passed

- 5) motion to retain Jerry Calhoun and William Thomas on the Board of Directors for the Support Group

motion made by Paul-Emile Bergeron
motion seconded by Jan Matthews
motion passed

- 6) motion to appoint Jerry Calhoun as the Chairman of the technical committee for another one year

term

motion made by Mike Jablonski
motion seconded by Jan Matthews
motion passed

Proceedings of the Meeting

Mike Jablonski called the meeting to order at approximately 8:30 A.M. He welcomed all present and thanked them for attending the meeting.

Report from the Technical Committee

Jerry Calhoun gave a brief summary of the technical committee meeting. He reported that the technical committee will be recommending that a new command be added to the SDI-12 Specification. This is a command to get information and setup information from sensors. The Technical Committee will also investigate a differential version of SDI-12, at 9600 baud. The Technical Committee will also review the RT/impedance requirements of SDI-12.

Review of Activities of the Group in 1999/2000

Mike reported that the Group had released version 1.3 of the SDI-12 Specification on April 7, 2000. Mike also reported that a copy of the version 1.3 specification had been mailed to each member of the Support Group and that a copy of it has been posted on the Group's web site in the Adobe PDF format. Mike further reported that two newsletters had been mailed to the membership in the past year.

Financial Status of the Group

Mike informed that group that cost of running the group now exceed revenues, and that the Group is in arrears to the amount of \$465.22. (See attached balance sheet dated 11/02/00.) Money is owed to AMASS data (\$800.00, for web page maintenance), Sutron Corporation (\$1,774.74, for travel expenses to prior meetings), and NR Systems, Inc. (\$ 474.56, for newsletter preparation and mailing costs). Cash in the account was reported to be \$2,584.0). This results in a deficit of \$465.22. Mike said that his business, NR Systems, would not request payment of \$474.56 until sufficient funds are available. He also said that Amass Data and Sutron should be paid, in full, with the cash currently in the account.

After some discussion, the group voted to raise the dues from \$120.00 to \$200.00 per year for membership in the Group. This motion passed by unanimous consent.

Other Business

Five addition motions were made and passed. All motions were passed by unanimous consent.

- 1) to reinstate the Technical Committee for another year;
- 2) to keep a representative from the South Florida Water Management District on the Technical Committee;

- 3) to appoint Mike Jablonski to serve as the Chairman for another year;
- 4) to retain Jerry Calhoun and William Thomas on the Group's Board of Directors;
- 5) to appoint Jerry Calhoun to serve as the Chairman of the Technical Committee for another year.

The meeting adjourned upon conclusion of business.

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