

SDI-12 SUPPORT GROUP News

SERIAL DATA INTERFACE AT 1200 BAUD

AMJ EQUIPMENT CORPORATION
CAMPBELL SCIENTIFIC, INC.
CAMPBELL SCIENTIFIC (CANADA), CORP.
CLIMATRONICS CORPORATION
COASTAL ENVIRONMENTAL SYSTEMS
DESIGN ANALYSIS ASSOCIATES, INC.
ENDECO/YSI
ENVIRONMENTAL SYSTEMS CORPORATION
FCI ENVIRONMENTAL, INC.
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IN-SITU, INC.
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MET ONE NORTHWEST, INC.
MINDATA PTY LTD
NR SYSTEMS, INC.
PAROSCIENTIFIC, INC.
RAINWISE
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SETRA SYSTEMS, INC.
SIGNAL ENGINEERING, INC.
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SOLOMAT
SOUTH FLORIDA WATER MANAGEMENT
STEVENS WATER MANAGEMENT
SUTRON CORPORATION
TAVIS CORPORATION
TROXLER ELECTRONIC LABORATORIES, INC.
U.S. GEOLOGICAL SURVEY
VITEL, INC.

DECEMBER 1995

The SDI-12 Support Group's mission is to support and educate the environmental monitoring industry on a standard for serial interface between data collection systems and micro-processor based sensors.

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1995 Annual Meeting

The annual technical committee meeting was held on Monday, November 6, 1995 followed by the annual general meeting on Tuesday, November 7. These meetings were held at the Wyndham Greenspoint Hotel, the site of the AWRA Conference in Houston, Texas. General officers and the technical committee members were elected, changes to the SDI-12 specification discussed, and changes in the way the group is managed were also discussed.

The SDI-12 Support Group had a booth at the conference. Copies of the SDI-12 standard, SDI-12 Newsletters, and a report on the proposed changes to the standard were handed out. The booth was a success with many people stopping by. ✓

SDI-12 Upgraded to Version 1.2

The SDI-12 Support Group membership has voted in favor of five out of six proposed changes to SDI-12. This upgrades SDI-12 from Version 1.1 to 1.2. The following table shows how the membership voted (24 ballots were returned):

	Yes	No	Abstain	% in Favor
1. Change Address Command	21	2	1	87.50
2. Address Query Command	20	3	1	83.33
3. Clarifications to the Specification	22	0	2	91.17
4. Concurrent Measurements	18	5	1	75.00
5. Continuous Measurements	19	4	1	79.17
6. Strobed Measurements	13	9	2	54.17

The bylaws for the SDI-12 Support Group require a two-thirds majority of those who return ballots to change the standard. Items 1 to 5, therefore, were accepted by the Group. Item 6, the strobed measurement, will not be added to SDI-12.

The SDI-12 Support Group's Technical Committee met on November 6, 1995, to review the ballots and to discuss all comments received with the ballots. The committee reviewed all comments received from the membership to determine if any new information would have a direct impact upon acceptance of the above changes. Several comments were received, but no comments provided information which would preclude upgrading SDI-12 with the new features.

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The SDI-12 Support Group is a non-profit organization.

Summary of the Changes

Change Address Command: This adds a new command to the SDI-12 command set to provide a standard way to change the address of SDI-12 sensors.

Address Query Command: This command provides a standard and easy way to determine the address of a sensor.

Clarifications: This clarifies several points in the SDI-12 Specification that have been found to be confusing or ambiguous. The clarifications better explain sensor addresses, extended commands, and the data recorder retries.

Concurrent Measurements: This adds the ability to have more than one SDI-12 sensor taking a measurement at a time. Using the concurrent measurement command, a data recorder can communicate with one sensor while another sensor is taking a measurement. Prior to Version 1.2, SDI-12 allowed only one sensor to start its measurement cycle at any given time.

Continuous Measurements: This feature lets a data recorder take readings from a sensor without using the start measurement commands (i.e., the M commands).

The committee also reviewed, in detail, a draft of Version 1.2 of SDI-12, to review the wording of the proposed changes. Some phrases and wording were changed to make the documents as clear as possible. No technical changes, other than those accepted by the group were added to the specification.

Another Ballot

The Technical Committee found two issues during the meeting in November, related to Version 1.2 of SDI-12, that require another vote by the members of the SDI-12 Support Group.

1. Required Response to the Additional M Commands (aM1!...aM9!)

The following text was published in the proposed changes to the SDI-12 Specification, dated July 5, 1995 that was sent to all members of the SDI-12 Support Group:

To comply with Version 1.2 or higher of SDI-12, sensors must respond to the additional measurement commands (aM1!...aM9!) and data recorders must be able to log data from the additional measurement commands. If a sensor has no data defined for an additional measurement command, it should return a0000<CR><LF>, saying that it has zero data values ready. Not responding to the command is not acceptable.

Although the above text was in the proposed changes, it was not a line item on the ballot that the membership voted upon. This should have been a line item on the ballot because it adds a new requirement for Version 1.2 sensors. Currently, some Version 1.1 sensors respond as stated above, others ignore additional M commands that they do not support. Therefore, the committee

decided to put the above requirement out to a vote by the membership. If a two-thirds majority of those who return ballots vote in favor of it, the above paragraph will be added to Version 1.2.

2. Problems with Continuous Measurements

Two potential problems were identified with the continuous measurement command, as accepted by the Group:

1. There is no way for a data recorder to know if a sensor is capable of supporting continuous measurement.
2. Can a sensor be put into, and taken out of, a continuous measurement mode? If so, how? Extended commands?

The Technical Committee proposes to circumvent these problems by adding a new command to the basic SDI-12 commands set. This will be the R (for read) command, and will take a direct reading from the sensor, without the use of an M command. The continuous measurement command will be described as follows:

Sensors that are able to continuously monitor the phenomena to be measured, such as a shaft

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Version 1.2 (continued)

encoder, do not require a start measurement command (M!, M1!...M9!). They can be read directly with the R commands (R0!...R9!). For example:

If (the sensor is operating in a continuous measurement mode) then

aR0! will get and return the current reading of the sensor

The R commands (R0!...R9!) work exactly like the D commands (D0!...D1!). The only difference is that the R commands do not need to be preceded with an M command, which tells the sensor to take a measurement.

If a sensor is unable to take a continuous measurement, then it must return its address followed by a carriage return/line feed (a<CR><LF>), in response to an R command.

Because this is not exactly what the membership voted on, the committee decided to put this out for a vote by the SDI-12 Support Group membership.

Please submit your ballot as soon as possible. If we do not receive a ballot from your company within 30 days, we will not call or fax you, or otherwise remind you to submit a ballot. To finish the Version 1.2 document as soon as

possible, we will not accept ballots after 30 days.

Version 1.2 Document

A draft of the Version 1.2 is ready. This document has a footnote on each page that says "Draft. Subject to Revision". Until the votes are in on the two issues described above, we cannot issue a final Version 1.2 document. In the meantime, if you would like a copy of the draft, which describes all of the proposed changes (including the R commands for continuous measurements), please call Katie Lockyer or Mike Jablonski. All members of the SDI-12 Support Group will receive the final Version 1.2 document as soon as it is ready. We will send a copy of the draft only upon request. The final version will be ready by February 1, 1996.✓

SDI-12 Technical Committee

The following nine people were elected to serve on the SDI-12 Support Group Technical Committee

Chairman:

Gerald Calhoun (Sutron Corporation)

Jim Betzhold (S FL Water Mgmt. Dist.)

Terry Dickey (Hydrolab)

Terrell Fletcher (Design Analysis)

Mike Jablonski (NR Systems)

Roy Johnson (U.S. Geological Survey)

Rick Lockyer (Handar)

Joe Thurston (Campbell Scientific)

Richard Wearn (Paroscientific)

SDI-12 Membership Directory

Attached you will find a directory listing the members of the SDI-12 Group. Each person's address and phone number is included.✓

Article Published on SDI-12

An article entitled "Object-Oriented SDI-12 Communications" has been published in the January issue of the C/C++ Users Journal. This article is by David Perelman-Hall, who has been using SDI-12 equipment in his position with the Lower Colorado River Authority. This article describes an object-oriented implementation of the SDI-12 protocol for data logging systems founded on C++ classes.✓

Join Us!

If you are interested in joining the SDI-12 Support Group or in obtaining a copy of the standard, please contact: Katie Lockyer, Handar, 408-734-9640.✓

**SDI-12
SUPPORT
GROUP
News**

Ballot to Accept SDI-12 Specification Changes

As discussed in the SDI-12 Version 1.2 article, please review the proposed changes and return the below ballot to vote on their acceptance by January 18, 1996. If you have any questions, please call Mike Jablonski at 801-752-4200 or Katie Lockyer at 408-734-9640.

Name: _____

Company: _____

Address: _____

Phone: _____ Fax: _____

Our company accepts the Version 1.2 requirements to respond to all M commands: Yes No

Our company accepts using (R0...R9) as the continuous measurement command: Yes No

Comments:

Please return this ballot to:

Katie Lockyer, Handar, 1288 Reamwood, Sunnyvale, CA 94089-2233, 408-734-9640, Fax: 408-734-0655

Please return your ballot by January 18, 1996.

SDI-12 Support Group Officers

Chairman

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Secretary

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