


The ISA2001 meeting was held in Houston during the later week of September 10 -13, 2001. There were 3 sessions:

## **Monday September 10 (PM) : NeSSI Tutorial (presented by Rob Dubois, Jim Tatera and Peter van Vuuren).**

The main purpose of the [NeSSI Tutorial](#)  was to introduce the preliminary concepts/proposals for a NeSSI Generation II specification. The main topics the tutorial addressed were:


1. Vision and Market Trends: S- Curves
2. Intent of the Gen II Specification
3. NeSSI Generation I, II, III comparisons
4. Features of a NeSSI Generation II System
5. What should a Generation II Prototype look like
6. Some "real examples"
7. A Roadmap
8. Summary


As at the IFPAC2001 session, we had a standing room only audience and at the end of the presentation, we received a lot of encouraging comments and several more people signed up to be on the NeSSI distribution list. Overall, the tutorial presentation was well received albeit with a few concerns about how we actually get to a commercial version of a Generation II system (our goal for 2002).

[The ISA2001 Tutorial was updated for the presentation at INTERMAC2001 and can be found here](#) .


We will of course be delighted to receive any comments or suggestions regarding the Generation II proposal.

## **Tuesday September 11 (PM): NeSSI Open Session**

The main objectives for the Open Session was to address some of the issues which may present hurdles in moving towards a commercial version of the Generation II systems. As a prelude to the session, we distributed several [flyers](#)  on the convention floor which we hope you will also find interesting.

The plan was to present three Gen II issues and then breakout into three working sessions to discuss each issue. The events of the day however, impacted the attendance and the mood of the participants. Nonetheless, we had quite a good session by gathering around a single table and working our way through all the issues as a single discussion group. The handout we used during this session is linked as [OpenSession.ppt](#) .

Below is a short summary of the meeting:

Q1: Hazardous/Electrical Area Classification for NeSSI This question generated quite a bit of discussion with the main concern being whether NeSSI components should be rated for DIV II or DIV I and that the premium for DIV I rated components might be excessive. Some participants felt that they do not need DIV I components. The outcome of the discussion was the formation of a X-team which would survey some specialist and end-users and then develop a recommendation. The X-team survey has been issued and we expect a recommendation prior to IFPAC2002 at which time we hope to report on the outcome. The X-team survey document is linked as [Xteam1.doc](#) .

Q2: A Wired/Unwired Communication Protocol and Sensor Analytical Manager (SAM) for NeSSI The participants in general agreed with the CAN based protocol proposal and the functionality of SAM as presented. Reliability and interference were the main concerns regarding a "wireless" implementation but a Wireless alternative will be pursued at a later date. Development costs for SAM was another concern.





The outcome of the discussion was to form a C-team that will address sensor communications and A-team to address SAM functionality in the coming months - stay tuned.

Q3: Sensor/Actuator Distributed Functionality for NeSSI The energy level for the group started to wane at this point so the discussion was not extensive. However, there was agreement that the main purpose of the NeSSI sensors should be as a diagnostic for proper operation of the sampling system (and therefore validation of the sample integrity). Other key criteria were "simple" and "inexpensive". In the latter case it was pointed out that the life cycle cost of the sensor was important. A price range of \$500 was mentioned as acceptable for a "smart" sensor.

Several vendors including Dave Simko from Swagelok, Raj Adani from Kinetics, John Dooley from CIRCOR, Richard Hughes from Autoflow and Steve Doe from Parker-Hannifin presented updates on their NeSSI substrates and components. We are collecting copies of these presentations. We will notify you when these can be obtained from the CPAC/NeSSI web location.

## Wednesday September 12 (AM): Ad-hoc NeSSI Exploratory Meeting - Sensor Communications

As we believe that the main contender protocols for NeSSI Sensor Communications are DeviceNet and SDS as part of a CAN-based distributed sensor network, the primary purpose of the meeting was to review the pros and cons of these two protocols and to develop a better understanding of how we can accommodate CAN-based protocols as part of a NeSSI Sensor communications specification.

[Bob Nickels \(Honeywell\)](#)  and [Jonathan Bradford \(Rockwell Automation\)](#) presented an overview of SDS and DeviceNet respectively. [Rick Ales \(Swagelok\)](#)  and Ed Bailey (CIRCOR) presented or made comments about the component manufacturers view. [Kelley Bell \(ABB\)](#)  and Bob Farmer (SAAI) presented and made comments from an analyzer/systems manufacturer's perspective. Unfortunately [Gary Franks from Kinetics](#)  was called away at the last minute and was unable to present his talk on DeviceNet, although he did provide a copy of his presentation for the CD.

Some observations:

- CAN-based system components are high volume production items and therefore low-cost
- Communication protocols developed and standardized to a high level of robustness (no development required for NeSSI applications) · Component size will allow mounting inside the small footprint of NeSSI sensors
- Protocols are open and extensive user support are available for SDS (Smart Solution Provider's network) and DeviceNet (ODVA = Open DeviceNet Vendors Association).
- Some of our major analyzer suppliers (e.g., SAAI and ABB) are already using CAN-based communications as an integral part of their new generation analyzer systems.
- Using the same hardware, it is in principle possible to "flash" configure the sensor to use either the SDS or DeviceNet protocol
- Major Issue: Can the communications hardware be configured for Intrinsic Safety?

All indications are that a CAN-based communications system is the right choice for NeSSI sensor communications and that we could benefit significantly in terms of cost, reliability and functionality of this essentially "off-the-shelf" communications technology.

The C-team will be working this issue in the coming months and we hope to have at least some preliminary findings that can be presented at IFPAC2002.