

Plant LAN
802.11
802.16

- * CHAOS IF WE'RE NOT CAREFUL
- * WE NEED STRUCTURE
- * WE NEED:
 - INTEROPERABILITY,
 - COEXISTENCE AND
 - SCALABILITY
- * WE NEED A STANDARD

SP100 *

Two global initiatives

- **Wireless HART**: closed, pushed by Emerson & ABB, Honeywell in touch but not enthusiastic. W-HART running **without END USERS** DUSTinc radios, balloted now, shipping near-now, class 3+ focus.
- **ISA SP100**: open, Honeywell, Emerson, Siemens, Yokogawa, Invensys, ABB + many more + **END USERS** + radio OEMs, ETA: 2008, class 1-5 focus. Long term mission.

ISA SP100 – Wireless IC&A Network Classes

| | |
|-------------------|--|
| Safety | Class 0 : Emergency action <i>(always critical)</i> E.g., Instrumented Protective Systems/Safeguarding systems. |
| | Class 1: Closed loop regulatory control <i>(often critical)</i> E.g., Regular control loops. |
| Control | Class 2: Closed loop supervisory control <i>(usually non-critical)</i> E.g., Set point manipulation for control system optimisation. |
| | Class 3: Open loop control <i>(human in the loop)</i> E.g., Manual human actions on alerts. |
| | NOTE: Batch levels* 3 & 4 could be class 2, class 1 or even class 0, depending on function |
| | <i>*Batch levels as defined by ISA S88: where L3 = "unit" and L4 = "process cell"</i> |
| Monitoring | Class 4: Alerting <i>Short-term operational consequence (e.g., event-based maintenance)</i> |
| | Class 5: Logging & downloading/uploading <i>No immediate operational consequence (e.g., history collection, SOE, preventive maintenance)</i> |


Importance of message timeliness increases 

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Address <http://www.isa.org/MSPrinterTemplate.cfm?MicrositeID=1134&CommitteeID=689> Go Links Google 00 isa Settings

ISA—The Instrumentation, Systems, and Automation Society 

SP100 End User Survey

ISA-SP100, Wireless Systems for Automation

2007 Committee Meetings

The ISA-SP100 Committee will hold the following meetings in 2007:

- 22-24 May 2007 - Austin, Texas
- 25-27 July 2007 - Vancouver, BC - *Following ISA Wireless Summit Conference*
- 3-5 October 2007 - ISA EXPO, Houston, TX

Austin Meeting details

Additional details on the 2007 meetings will be available closer to the actual meeting dates. Attendees and guests are asked to register for the 2007 meetings by contacting Linda Wolffe (919) 990-9257, lwolffe@isa.org.

Note: At the October 2006 meeting of SP100 the SP100.11 and SP100.14 efforts were merged to form SP100.11a under the auspices of WG3.

A Word from the Chairman

In working to assure confidence in, and the integrity of, wireless technology, and to provide criteria for implementation in manufacturing automation and control systems, the ISA-SP100 Committee has launched a number of project teams. Each team's goal is to develop documents that will help users make the right decision on industrial wireless implementations.

The project teams currently active are Co-Existence, Integration, Interoperability, Marketing, Networking, Physics of Radio, Technical RFP Evaluation Criteria (TREC), SP100.11a, Use Case and User's Guide. If you are interested in volunteering to help SP100 with any of these ongoing work efforts or would like additional information, please contact Linda Wolffe (919) 990-9257, lwolffe@isa.org.

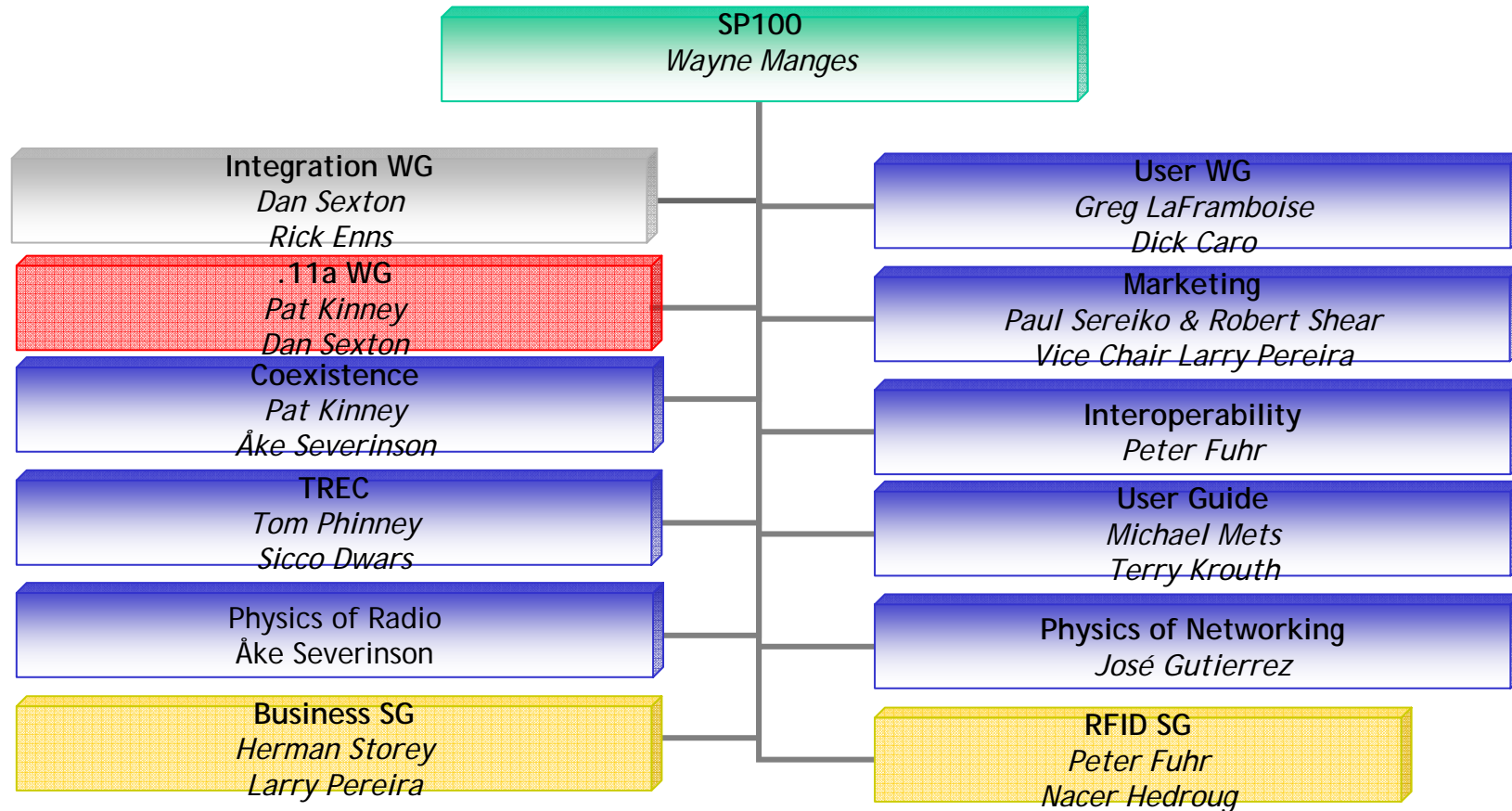
Scope

The ISA-SP100 Committee addresses wireless manufacturing and control systems in the areas of the:

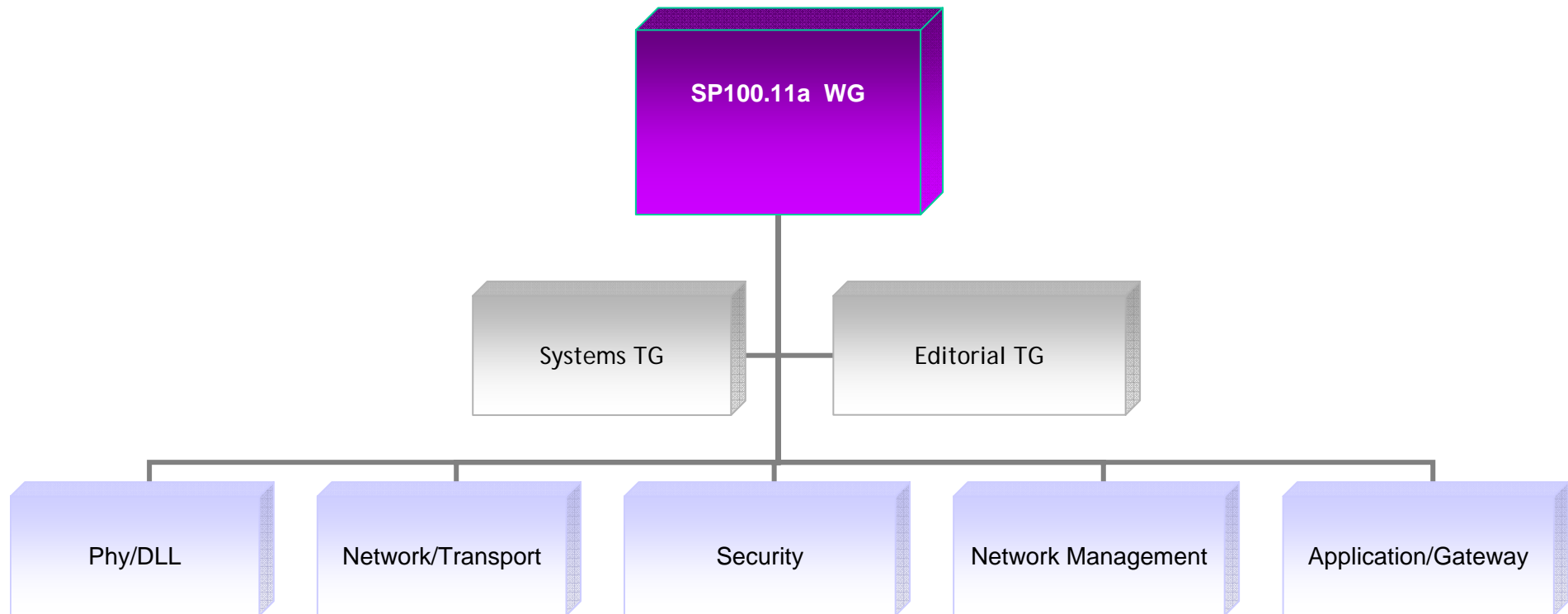
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SP100 Organization



SP100.11a WG Organization



System TG recommendation: SP100.11a Release 1 Will.....

- **Be an open standard for anyone to implement and deploy**
- **Be simple to use and deploy for end users**
- **Be focused on:**
 - **servicing process industry applications without excluding factory automation**
 - **in-plant/near-plant**
 - **global deployment**
- **Provide technology to address Class 1 (non-critical) to Class 5 applications such as monitoring**
- **Assure multi-vendor device interoperability**
- **Have a draft standard ready for work group balloting by October, 2007**
- **Include only 2.4 GHz 802.15.4-2006 radios**
- **Adhere to a comprehensive coexistence strategy**
- **Use channel hopping to support co-existence and increase reliability**
- **Use a single application layer providing both native and tunneling protocol capability for broad usability**
- **Provide simple, flexible, and scalable security addressing major industrial threats leveraging 802.15.4-2006 security**
- **Offer field device meshing and star capability**

User Workgroup, typical telecall meeting minutes

Attendees: Dick Caro (CMC), Davie Shull (Savannah River), Linda Wolfe (ISA), Dave Land (ConocoPhillips), Hermann Suselbeek (WIB), Mikell Becker (Sense-Comm), Scott Bayer (Freescale), Greg LaFramboise (Chevron), Sicco Dwars (Shell)

Agenda: Accepted without comment

Minutes of March 29, telecon: Accepted without addition or modification.

No progress to report on finding a new Co-Chair.

Ron Morris is interested and has checked with his management to confirm budget. We should have an answer by the next call on April 26.

Review of the standard for SP100.11a as the result of the Karlsruhe meeting.

- There will be only one PHY, the agreed-upon 2.4GHz radio using IEEE 802.15.4-2006 specification, but with channel hopping added.

- This will be a full mesh network.

- There is a new partial layer called the upper data link layer (UDLL) that will handle mesh routing and channel hopping.

- The Network and Transport layers have been combined into the NetTrans task group.

- The Network layer will handle all routing outside the local SP100 network, and will supply network segmentation. Additionally, it will send maximum segment length information to the host in case the Application wishes to do its own segmentation.

- The Transport layer will provide cyclic scheduled, publish/subscribe, confirmed, multicast, and ordinary messaging.

- The Application Layer calls for both asynchronous and cyclic reads and writes, multicast messages, and alarms. This also includes a tunneling protocol for non-SP100 messages.

- The Application Layer uses an EDDL (IEC 61804, ISA 104) message structure making it highly compatible with Foundation Fieldbus, HART, and Profibus as well as OPC.

- The schedule has been approved calling for an SP100 committee ballot on SP100.11a Release 1 by January 2008.

- Provisioning (device commissioning) was discussed for the first time by the System TG. This will be over the air not requiring a wired connection. Network Management will define this.

- It will NOT be possible to integrate support for Wireless HART into SP100.11a. The reasons are that Wireless HART uses totally incompatible Network, Transport, and Application layers. The best we can do is to encapsulate any Wireless HART messages received and send them to the Gateway. If someone wishes to handle these encapsulated messages, they must build a Gateway to do it, but that is outside SP100.11a scope.