Voluntary Information-Sharing System Federal Advisory Committee

Subcommittee – Technology and R&D
Chris Warner – Alternate Chairman

Report Out Presentation

June 20, 2018

Subcommittee - Technology and R&D, Members

- Alternate Designated Federal Official: **Chris McLaren**

- Subcommittee Chair: **Bryce Brown**

- Subcommittee Members:

  - Eric Amundsen
  - Michael Bellamy
  - Bob Buchanan
  - Jason Cradit
  - Yiming Deng

  - Alicia Farag
  - Michael Keller
  - Holly Pearen
  - Chris Warner
  - Mark Zuniga

  Invited Guests
  - Cliff Johnson, PRCI
  - Jason Skow, C-FER

Subcommittee - Technology and R&D
Task Statement

- **Task Statement Number**: 18-4

- **Task Statement Title:** Support Committee by Recommending Secure System(s) Architecture. Make Recommendations required for Continuous Improvement and/or needed Development of Technologies and Methodologies

- **Task Statement Description(s):**

1. Identify Assumptions from other Subcommittees for our inputs and outputs (Process Sharing & Best Practices) and define Taxonomy.

2. Determine/Define and standardize the applicable pipeline inspection information (quantitative) and its native data format (tabular, geospatial, etc.)

3. Conduct historical studies that help in the understanding of current best practices for; managing and sharing pipeline inspection information and the associated areas for continuous improvement.

4. Analyze/define data security and protection to safeguard the proprietary nature of the pipeline inspection information shared (quantitative).

5. Determine the Quality Control Procedures required to facilitate the accurate exchange of the pipeline inspection information.

6. Determine the feasibility of integrating the pipeline inspection information with other relevant pipeline safety data that is already available or envisioned to be developed. Are there data format, completeness, and/or platform issues that need to be addressed?

7. Determine the needed interpretation of the pipeline inspection information shared and the areas that could be addressed;
    1. understanding the capabilities/limitations, and best practices,
    2. data maintenance, continuous improvement, and/or further research and development, and
    3. perspective predictive analysis capabilities for threat and risk analysis purposes.

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Presentations to the Subcommittee:

1. OneBridge Solutions – Examples of machine learning to enhance anomaly identification for ILI runs

Work Groups Established

1. **Assumptions** (understand the overlap/integration between Process Sharing and Best Practices Subcommittee in order to document the assumptions for the "Functional Specification(s)" and further define Taxonomy)

2. **Architecture/IT** (IT, user authorization, accessibility, security, database/software, etc.)

3. **Continuous Improvement/R&D** (considerations for improvements and/or developments)

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Review Subcommittee/Work Group Accomplishments

1. **Assumptions** - Bryce Brown
    *   Review overlap between Subcommittees, Process Sharing and Best Practices – Discussion (Mark Hereth and Eric Amundsen)
    *   Process Sharing developing the basis for needed Taxonomy
    *   Architecture/IT will be reviewed by Process Sharing, Best Practices and mainly focused upon by Technology/R&D – presented by Jason Cradit later today
    *   Continued co-participation w/Process Sharing to leverage common areas of interest.

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Review Subcommittee/Work Group Accomplishments

2.   **Architecture/I.T.** - Jason Cradit
   - Requires the Input and Output (e.g. "buckets" of types of information from Process Sharing)
   - Options are being considered for the needed Architecture/IT
     - De-Centralized (trying to determine when), API (Application Program Interface) -
     - Centralized, ASIAS/FOQA (FAA)
     - Progressive evolution
   - De-Identification is a challenge, many Operators, Service Providers, Technology Providers, etc.
   - Will offer preferred option in recommendation based on knowing the inputs/outputs.
   - Worked with Microsoft to develop proposed architecture – Presentation to full Work Group on 6/20.

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Review Subcommittee/Work Group Accomplishments

3. **Continuous Improvement/R&D** (considerations for improvements and/or developments) - Chris Warner
   - Full subcommittee reviewed an initial draft of report discussing continuous improvement and two case studies (ILI and ECDA). The report covers:
     - the needs and benefits to key stakeholders, including; Public, Regulators, Operators, Service Providers and Universities/Research Entities
     - Motivations for continuous improvement/R&D
     - How to encourage participation and
     - Key KPIs to communicate initial successes of VIS
   - Full Sub-committee reviewed the documents and provided feedback on format, wording and recommended additional emphasis on the safety aspects of continuous improvement

Questions/Comments