2018 Victoria - Meeting Minutes
ASA/TCAA - Speech Privacy in the Built Environment Subcommittee

Kenneth W Good Jr November 21st 2018
Meeting Date: November 7th 2018 5:00pm
Room: Fall ASA meeting Conference Victoria, LIBRARY (FE)

Note: These are the meeting minutes with the intent to capture the discussion and thoughts from the Victoria meeting. <u>Nothing</u> within this document should be construed as a position statement or the like.

Meeting Attendance:
We had 20 participants at the Victoria meeting

Meeting Minutes & Agendas
Previous meeting agenda and minutes are available on the TCAA/Subcommittee website
https://tcaaasa.org/subcommittees/

Thank you and Acknowledgements:
- Ben Taft – Thank you for taking the meeting minutes
- Roger Logan – Roger has agreed to serve as project manager and coordinate ongoing work
- Eric Reuter – TCAA Chairman
- Jennifer Lentz – Liaison to TC Psychological & Physiological Acoustics and TC Speech Communications
- Thank you to the entire team for contributing your time, efforts, experience and talents!

Chair's Report:
Related organizations:
Complementary work is being paralleled in ASTM E33 Committees as well as ASHRAE
From this committee Noral Stewart, Ken Roy, Ric Doedens, Roderic Mackenzie, Christoph Hoeller & Ken Good participate in ASTM.
Eric Reuter will be participating in ASHRE

The task of this committee:
This committee is intended to be an ongoing team. We have identified several issues related to acoustical speech privacy. It is not the intent of this committee to write standards but we can create discovery and recommendation documents for existing and new standards and practices including:
- What new standard and/or practices may be needed?
- What changes to current standard and/or practices are suggested?
- Where conflicts may exist between standard and/or practices?

Discussion on Work Tasks Updates

Per the May meeting we have identified several key areas of work and teams.

Terminology: Where and how is the term "Speech Privacy" used?

- Review Standards using the term Speech Privacy and other related terms: Ben Shafer prepared findings on literature search but was unable to attend the Vitoria meeting. We hope to distribute the finding with the committee.
- Proposed Terms for "Speech Privacy" – Ken & Ange: *The following are the suggestions proposed by Ken Good*. We suggest that the term Speech Privacy continue to be used along with the three sub-sections to complement more clear distinction:
    - The suggestion of "**Speech Distraction**" was favored over "Speech Annoyance". This category is intended from the listener's perspective. Degrees of Speech Distraction will be

related to the inability to focus on tasks and/or impede productivity. Most common use would be open plan office area for example
    - "**Speech Confidentiality**": This category is intended from the talkers perspective with the expectation that orally shared information will be reasonable contained / controlled to the intended listeners. The distinction is that speech may be audible but not intelligible for unintended listeners. Degrees of Speech Confidentiality will be related to the listeners inability to construct the information within intruding speech. Typical use would be enclosed offices including medical treatment/examination area but might also apply to open spaces such as pharmacies if low speech levels and appropriate distances are used. This needs to be explored.
    - "**Speech Security**": This is the most stringent category and reflects inaudibility. It is important to note that this is related to "casual listeners" and does NOT include active eavesdropping. Degrees of Speech Security will relate to inaudibility at various voice efforts. Typical use would be communicating any highly sensitive information including government and potentially some financial or medical applications.
    - The HIPAA Regulation and other documents explicitly uses "privacy", so the distraction-confidentiality-security distinctions should be positioned as facets, or types, (classes?) of speech privacy.

- Use of the term "Noise": related to specific background signal such as sound masking – Noral, Ric, Tim
    - Noral Stewart has lead the team by drafted a paper (working title) *When Noise Is Not Noise* that makes key points on this issue. At the moment the consensus seems to be forming that "background noise" is the result incidental sources such as building systems, traffic and other non-intentional background signals and "background sound" is a term for intended and specific background signals such as sound masking and others. Another critical distinctions should be between "bothersome" and "beneficial" background noise/sound.

Existing Standards and Requirements:

- Review existing Standards, Metrics, & Methods for Speech Privacy – Eric, Ben Shafer
    - This is closely related to the search for where the term speech privacy appears as discussed above.
    - Ken Roy is leading revisions to ASTM E 1130. He is soliciting information and data related to methods, conditions and metrics used by the architectural community. Conditions solicited are for the following:
        - *Source* Open Plan to *Receive* Open Plan
        - *Source* Open Plan to *Receive* Enclosed Room
        - *Source* Enclosed Room to *Receive* Open Plan
        - *Source* Enclosed Room to *Receive* Enclosed Room
    - Please feel free to send information to Ken Roy (see me if you need his contact information)
    - Discussed at the Victoria meeting:
        - **Speech Privacy Potential (SPP)**
            - SPP = noise reduction + background
            - Is simple
            - Is appearing in many building specification
            - Has no Standardization
        - **Speech Transmission Index (STI):** Ken suggested that this is best for speech intelligibility only and that STI might underestimate speech distraction because adding revelation to speech will decrease intelligibility, it may not lower distraction/annoyance.
        - **Privacy Index (PI):**
            - ASTM E1130

- Based on inverse of Articulation Index (AI)
- Currently Open Plan only per the standard but accepted practice to use with ASTM E336 for enclosed spaces – Although not defined in any standard
- Caps out at PI 100 (insufficient for speech security)

- **Speech Privacy Class (SPC):**
  - ASTM E2638
  - Developed for "speech security scenarios"
  - Similar computation as to SPP
  - In Is not bounded (no upper limit)
  - Does not use frequency weighting (voice, architecture, nor hearing)
  - Questionable on accuracy for "speech confidentiality" and "speech distraction" (weighting may become more important as the S/N is closer)
  - Users also apply ASTM E336 as the room to room measurement (not defined in any standard)
  - Users ignore the table and find lower value acceptable for customers.
- **ISO 3382-3-2012**
  - This standard was mentioned but limited use or knowledge was discussed buy by the committee members.
- **Overall**
  - People within the profession tend to prefer one of the existing standards but do not use them verbatim.
  - Everyone takes their own idiosyncratic approaches to applying them.

Future Work:

- Roger will be contacting the various team to coordinate conference calls between meetings.
- We hope to make the standards available to the committee members pending permissions
- ASA "Basecamp" (sharable document repository): Ken will discuss with Dan Farrell about a subsection for this Subcommittee
- WG 44 (ASA/ANSI S12.70 Criteria for Evaluating Speech Privacy in Healthcare Facilities) will be meeting at the ASA Spring Meeting in Louisville.

Future Meetings

- **177th ASA Meeting Louisville May 13th – 17th 2019**
  - This Subcommittee will be meeting at the standard time (Wednesday 5:00pm)
  - Eric Reuter and Ken Good are co-chairing a session on Speech Privacy. Please see Eric or Ken if you wish to present an invited paper or see the ASA Call for papers.
- **178th ASA Meeting San Diego December 2nd – 6th 2019**
  - This Subcommittee will be meeting at the standard time (Wednesday 5:00pm)
  - Jennifer Lentz is coordinating a session/tutorial and panel discussion about speech production, transmission & perception specifically for the benefit of the architectural acoustics community.
- **179th ASA Meeting Chicago May 11th – 15th**
  - This Subcommittee will be meeting at the standard time (Wednesday 5:00pm)

Adjourn