- The meeting was brought to order by the past chair of the committee, David Josephson (DJ).
- DJ announced that we had no agenda for this meeting, other than to discuss the general purpose and direction of technical committee.
- DJ introduced the new chair of the committee, Geoff Martin, who chaired the remainder of the session.
- The meeting was essentially a spontaneous brainstorming session regarding possible avenues for the committee to follow in the future.
- I (GM) have taken these ideas out of chronological order in the meeting and re-organized by topic.

Short history of the committee
- We have used the tech committee as a forum over the past years to discuss things that were of interest to the members.
- Things we've talked about in the past included:
  - Standards processes
  - Education of microphone users
  - New developments in microphone technology
- It has, in the past, essentially been a place for a small number of people to get together and talk about microphone technology.

Role of the Technical Committee
- The TC has 2 roles
  - Suggesting and assisting in the creation of standards
  - Intuitive education

Standards ideas
- We don't have a standard “Road and Track Test” for microphones. Perhaps this is an area where we can contribute.
- One of the things that was discussed originally was that terminology regarding microphone specifications was difficult to interpret and that more meaningful specifications for the users are needed.
  - How do we create data and distribute it? Keeping in mind that we aren't restricted to paper
  - There has been a lot of interest, met with no resources, indifference and rejection. Manufacturers apparently don't like additional information being coupled to a microphone
  - This effort may have been batted back from the Standards Committee to the Technical Committee. Not all manufactures use the IEC standard on measurements.
  - Jim Brown has been looking at electrical interface areas and the RFI measurements. This could fold in as well.
  - Spatial behaviour of microphones
- AES work in the same area happening now

- High frequency distortion in microphone
  - Poll the microphone manufacturers regarding any common unsolved problems that are of merit. HF distortion components that were reproducible but not yet quantifiable... Take a B&K large diaphragm mic and you'll get HF tambourine distortion products. Small diaphragm mic’s do it less, dynamics don't do it at all.

- Near field polar patterns
  - This is particularly interesting for things like headset microphones. The Standards Committee has gone over this in the past. Each manufacturer chooses the most flattering test method for their product.
  - IEC 602-68
  - It's difficult to make a point source (but do you need it) when doing a nearfield measurement of a microphone.
  - This is also of interest to those in telephony
  - Directional vocal mic near a face. Understanding the diffuse field and polar characteristics would be interesting and surprising.

- Far-field response
  - This is not well understood.

- 3D-impulse response

**Intuitive education and outreach**

- People want to get a basic tool. Michael Williams pointed out that ORTF and NOS are just part of a larger general system. The microphone literature that is available is mixed. Maybe the TC or the AES could be a forum on a common basis.

- Ideas for educational software:
  - Listen though the off-axis impulse response of your mic - convolution box
  - Interactive programs and displays - i.e. proximity effect vs. distance - you move the fader and see the response change. Interactive CDROM?

- If the TC were to create a website that are of interest to consumers, then you go there instead of to the manufacturers website.
  - If we come up with useful things, then it might even get copied to the manufacturers sites.
  - History has shown that a good microphone doesn't necessarily have a perfect measurement.
  - If you're showing generic data and spec's then no one manufacturer gets offended. Everybody's mic's vary from the theory.
  - This may be of interest to the perceptual people. They may have some info on the relative importance of characteristics and preference.

- Ideas for educational material
- What do things sound like?
  - proximity effect
  - overload
  - off-axis response
  - wind and pop filter
  - vibration
  - membrane distortion
  - preamp distortion

- What does a pad fix?
  - What happens when your wireless companders aren't lined up right? i.e. incorrect gains from transmitter to receiver.

- What does self-noise mean? Play things with different self-noise illustrating with different instruments. When do you care about this specification?

- There is a demo CD is available (maybe just wave files) from Ron Streicher - but it's synthetic. Emulating off-axis response.

- We talked about at some point, producing a format where all of these things could be combined in one view. One approach was that this could be a family of curves. Response at freq. distance, noise, distortion. Extra info could be added if it's a wireless microphone.

- We should create a tiered program where the first things are the most basic.

- The challenge is always – how is this of value to the public? We need an outreach program.

- Orchestrated tutorial workshops at conventions on specific subjects. Each presenter writes a short document on the topic which is inserted as a chapter in a continuing document on microphone technology.

- Teach people what they need to know and why they want to know it. Time to contact Berlin and San Francisco. Start assembling tutorials as part of the document.

**Concentration**

- Should we include newer microphones. Hands-free in cars. Different applications. Wind, noise, EMC, measurement techniques have to differ...

- We have to remember OEM microphones, active noise cancellation, hearing aids, telecommunication, array microphones. MEM’s microphones.

- We have to have a forum and official support where we can achieve people to do the work. What gets done depends on who is willing to do it.

**Attendees**

- Richard Barnert  <barnetr@akg.com>
- Jim Bobisuthi  <jim.bobisuthi@plantronics.com>
- Eddy B. Brixen  <ebb@ebb-consult.com>
- Mark Gilbert  <mgilbert@shure.com>
- Jackie Green <jagreen@atus.com>
- Osman Isvan <osman.isvan@plantronics.com>
- David Josephson <dlj@Josephson.com>
- Kelly Kay <kelly@josephson.com>
- Geoff Martin <ggm@bang-olufsen.dk>
- Douglas McKinnie <d.mckinnie@usa.net>
- Martin Opitz <opitzm@akg.com>
- Tad Rollow <tad_rollow@digidesign.com>
- Bob Schulein <schulein@ameritech.net>
- Steve Thompson <steve.thompson@knowles.com>