MACTRad Annual Review – Practice

3/28/24

**Overall comments**

Animations everywhere are a bit distracting to me. I don’t feel like they add much. The ones that are specific to showing a part of the antenna in a different orientation were ok.

Focus more on the positive side of things. You should state things that you have done, things you have accomplished, and simulations/designs that are working *much* more than you state things that either didn’t work, were delayed, or weren’t what you wanted.

The formatting throughout needs to be streamlined.

It seems like the main antenna is at W band. Why is X band being used/explored/discussed? Make sure it’s very clear both 1) when you’re switching back and forth between X and W band studies and 2) why you’re talking about a non-targeted frequency band.

Question: how technical is the audience for this? How often have they been updated on your project/progress?

I felt like it was missing a lot of the “why are we here?” I know that the quad chart mentions some applications/reasons to care, but I feel like I needed a bit more/deeper/stronger of context. I’d imagine it would sound something like “cloud radars are great because of XYZ. They currently lack XYZ. We’re building a metasurface reflectarray that will do XYZ. With that, we’ll unlock XYZ.” I think this should immediately follow the quad chart, and might include what you have now as S7. I also think you should spend more time describing S7 when presenting, wherever it ends up.

I think seeing a high level schedule would be helpful. It might just be a block diagram with 5-8 subtasks. I feel like for this type of meeting, it’s really helpful to put in context which steps you’ve already done, which ones you’re currently working on, and which ones will be done in the future.

**Slide-by-slide comments**

S9: I don’t think you want “delays” to be so early. It puts the early focus on a negative thing, rather than all of the positive progress you have made.

S13: This is too detailed for an outline. Outlines should be brief, with details on the relevant slides.

S15: I feel like by this point, I still don’t have a great overall summary of the problem you’re trying to solve. Even for a review meeting, there should be a high-level summary of what you’re trying to, what the steps are to get there, and then where are you in that process. It’s important to put the viewers in the proper context for the overall project and I feel like we flew past that.

S17: I think this got too detailed too quickly.

S18: Legend missing. What is “old” vs. “new”?

-The beam pattern (in 3D) looks a bit odd – what scaling/colormap was used?

S19: Diagram showing delta maybe should not be on top of plot.

-Slide content is good, but the layout appears unorganized to me

S29: There should be an introduction to the goal of the unit cell design. That’s a good place to mention some of the details you discussed (patch size, phase shift, etc).

S30: This can probably be combined with the previous slide

-You mention the radial stub performance, but there’s no plot. Better to either see a plot that validates what you’re saying or to just gloss over it and say something quick like, “we included a radial stub to decouple DC and RF.”

S31: I am confused by the magnitude shown on the right. I’d just normalize them, plot them in linear, and report the contrast ratio

S33: It’s a bit weird to have different sections/breaks for only 1-3 slides. I’d instead just skip those break slides and opt for less frequent outline slides.

S36 and S37: I’d combine these slides. Focus less on “we wanted to do this but then decided it’s too expensive.” Focus more on “here’s a great way to characterize things. It saves cost and provides *in situ­* experimental characterization to provide more accurate behavior in a reflectarray context.”

S47: I don’t think ground plane should be one word

-I agree with Aaron – put the purposes of each portion in the diagram