The Microwave Engineering Project (MEP) aims to design and build a high-speed digital microwave-band system for amateur radio that supports high-definition video, point-to-point, and multiple-access communications.

We would like to invite anyone interested in microwave communications to participate in the project. We have just kicked off our exploratory phase.

This is the part of the project where (according to several engineers I've had the opportunity to spend time with) the sentence "Because it's COOL!" is plenty good justification for bringing up a function or an idea. I very much want to know what interested amateur radio operators would like to see us try and accomplish together as a design and development team.

The only credential needed here is intellectual curiosity, a willingness to express yourself and the intent to learn along the way. We are a group of ordinary people talking about doing extraordinary things. My motivation is to enable a supportive and collaborative engineering process, learn new things, and produce something at the end of the day that we can all be proud of.

Consider this phase to be open season, with the goal being as good a description (vision) of the project as we are able to write down. This means taking a fresh look at what we can offer amateur radio, and what we want to work on and experiment with.

There are many ways to approach this type of phase of a project. Being able to concisely summarize what problem is being solved by this project, or what need is being met, is very important because it provides a real foundation for producing a set of requirements, which will be the focus of the second phase of the project. That phase will be called requirements analysis.

Here is a brief description of what we've come up with so far as what we would like to produce.

We'd like to design and build a high-speed digital system for the relatively under-utilized microwave bands of 3.4 and 5.6 GHz. We want to support high-definition video. We would like to design something that could adapt from point-to-point use to multiple-access use without a lot of fiddling around. We'd very much like to include a satellite simulator in order to explore the development of, for example, delay-tolerant protocols and techniques that might be useful for experimental and educational purposes. We'd like for the system to be durable, and portable, and fun to use. We'd like it to be affordable, highly integrated and high power.

I'd like for it to do a lot of things, but most importantly, I'd like to know what you all think it should do (or not do), and why.

The team has a website, a mailing list, and a podcast. If you subscribe to the podcast, all documents, videos, and audio recordings from the project will be delivered to the feed reader of your choice. The mailing list archives are open for public reading. The hardware will be designed using TAPR's open hardware license (OHL). The software will be open source according to the GNU General Public License (GPL).

Please feel free to sign up for the mailing list and RSS feed at the website:

http://www.delmarnorth.com/microwave/

I serve the team as a coordinator. I have an MSEE in Information Theory from USC, worked at Qualcomm Incorporated for five years as an engineer in the Globalstar and Handset divisions, and am a life member of 10-10 International, ARRL, and AMSAT. I serve as newsletter editor for the Palomar Amateur Radio Club.

If you know of anyone that might be interested in this project, please forward this invitation. I'm happy to answer any and all questions.

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