TED Talk: Update #1 Script

So, first of all, since Andrew thought it would be funny to skip us last time (which by the way, thank you everyone for not pointing that out), we are Team 04 and we are doing the millimeter-wave RADAR to detect the moisture content of green coffee beans.

Currently, we are working on replicating a study that uses the XM125 RADAR to detect material types, specifically recyclable materials, just to get our feet wet with the hardware and tools we’ll be using. We’ve been successful in interfacing with the XM125 and A121 sensor using Acconeer’s A121 Exploration Tool. We’ve also managed to successfully interface the Exploration Tool with a Python library, so now we are able to see and manipulate the received wave data in Python.

The received data is in-phase/quadrature data, which is essentially a fancy way of saying complex values, so right now we’re looking into interpreting that data using phase shift, signal attenuation, and reflection properties in order to find the relative permittivity of the beans.

We’re also looking at different methods of using that permittivity to determine the moisture content of the beans - this might involve machine learning, linear regression models, and/or empirical models.