Thank u to my teammates for their sharing. Now I’ll introduce to you the expected work goals of my team.

We aim to design a multifunctional integrated model for communication, sensing, and model computing through scientific experimentation. As shown in the figure, the system consists of a multifunctional base station equipped with *N* antennas and *K* multifunctional intelligent terminals, each equipped with M antennas, where *K times M* less than or equal to *N*. The Range of Interest, including both the target sensing area and the interference area, is divided into multiple equally sized cubes, with each cube representing a pixel point. Within the sensing area, there are *I* targets that need to be sensed, while the interference area contains *O* clutters that act as interference sources.

Let me explain further.

For communication, the base station designs a corresponding communication receiver to decode the communication signals transmitted by the intelligent terminals. The purpose of this step is obtaining the desired communication data.

For target sensing, the base station receives reflected signals containing environmental information from the target area, and designs a sensing receiver to estimate the targets' reflection coefficients.

For model computation, the system employs an Over-the-Air Federated Learning framework. The base station designs a computation receiver to aggregate the locally trained models from all intelligent terminals, then it can obtain a global model.

In a word, we hope to enhance the communication performance such as communication speed, latency and utilization through this integrated model.

Just like the purpose of all scientific research, we hope that our scheme can make a real impact in real world. So finally we will evaluate it’s experimental performance in the real world scenarios such as intelligence transportation and the Internet of Things.

That’s all for our experimental scheme, thank you to all my teammates for their efforts, and special thanks to Professor Yang for the guidance.