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

我们希望能够通过学科调研和科学实验，设计一种功能复用的通信、感知和计算一体化系统模型。如图所示，它由配备*N* 根天线的多功能基站和*K* 个多功能智能终端组成，每个终端配备*M* 根天线，其中*KM ≤ N* 。将包括目标感知区域和干扰区域在内的兴趣范围（Range of Interest，ROI）划分为多个大小相等的立方体，每个立方体代表一个像素点。

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.

对于信息通信，基站设计相应的通信接收机，对各个智能终端传输的通信信号进行解码，以得到期望的通信数据。

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.

对于目标感知，基站接收到包含目标区域环境信息的反射信号，然后设计相应的感知接收机来估计目标的反射系数。

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.

对于模型计算，通过利用基于空中计算的联邦学习（Over-the-Air Federated Learning, AirFL）架构，基站设计相应的计算接收机，以聚合所有智能终端训练的本地模型，得到全局模型。

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 proposed 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.

