

Background and Motivation

RF-Powered Device

- remarkable advantage:
 - Extremely low cost in both **Deployment** and **Maintenance**
No need to routing power wiring for it
No worry for battery replacement
- obvious disadvantages:
 - It is **OFFLINE** - cannot access or be accessed from the Internet
- How to bridge those RF-Powered Devices with Internet?

Background and Motivation

Bridge RF-Powered Device with Internet

- Some primitive ideas:
 - Can we ask RF-Powered Device to Directly use WiFi just like my iPad? ❌ can't ask a kid to fly a jet

*Wifi Protocol consumes orders of magnitude more power
than what is available in ambient RF*

- Can we add a Transfer Station that support both Internet access and RF communication? ❌ seems practical, but lose our advantage of low deployment cost

*Need to deploy an extra special-purpose
powered infrastructure devices*