



Award #s:1932547/#1931861
 Start Date: 10/1/2-19

CPS: Small: Collaborative Research:

RF Sensing for Sign Language Driven Smart Environments

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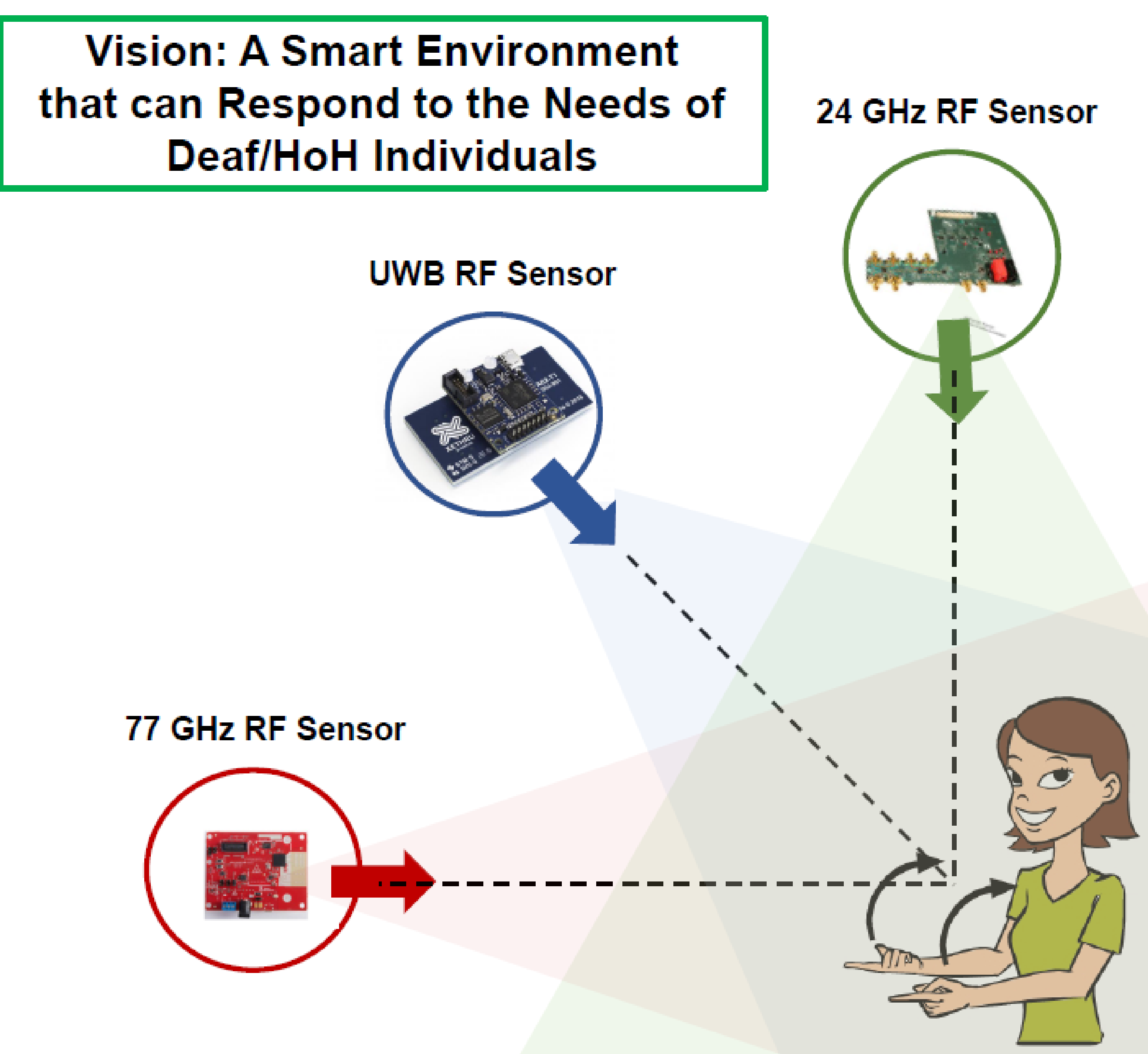
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Challenge:

- ❖ Design non-contact, robust ASL-sensitive user interfaces:
 - Non-contact, ambient
 - Minimize impact on privacy
 - Operational in dark

Solution:

- ❖ Exploit RF sensing, which offers greater temporal accuracy in range, velocity and angle measurements
- ❖ Design novel deep learning approaches for classification of high dimensional RF data representations



Scientific Impact:

- ❖ Improved accuracy and robustness in fine-scale human motion recognition for ambient intelligence
- ❖ Linguistic studies of sign language using radar

Broader Impact:

- Increased access to technology for the Deaf community and ASL users
- Collaboration with Deaf community partners towards research and STEM education
- >97% top-2 accuracy of 100 ASL signs and sequential recognition in context of daily activity