



Creating Infinite
Possibilities.

Wi-Fi Sensing: Detecting Motion for Security, Aging in Place, and More

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- What is Wi-Fi Sensing?
- Use Cases
 - Home Security
 - Aging in Place
 - Advanced Medical Applications
 - Future Innovations

What is Wi-Fi Sensing?

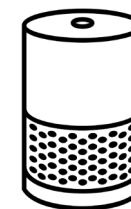
Wi-Fi Sensing is the ability to detect motion in an area covered by a WLAN

What is Wi-Fi Sensing?



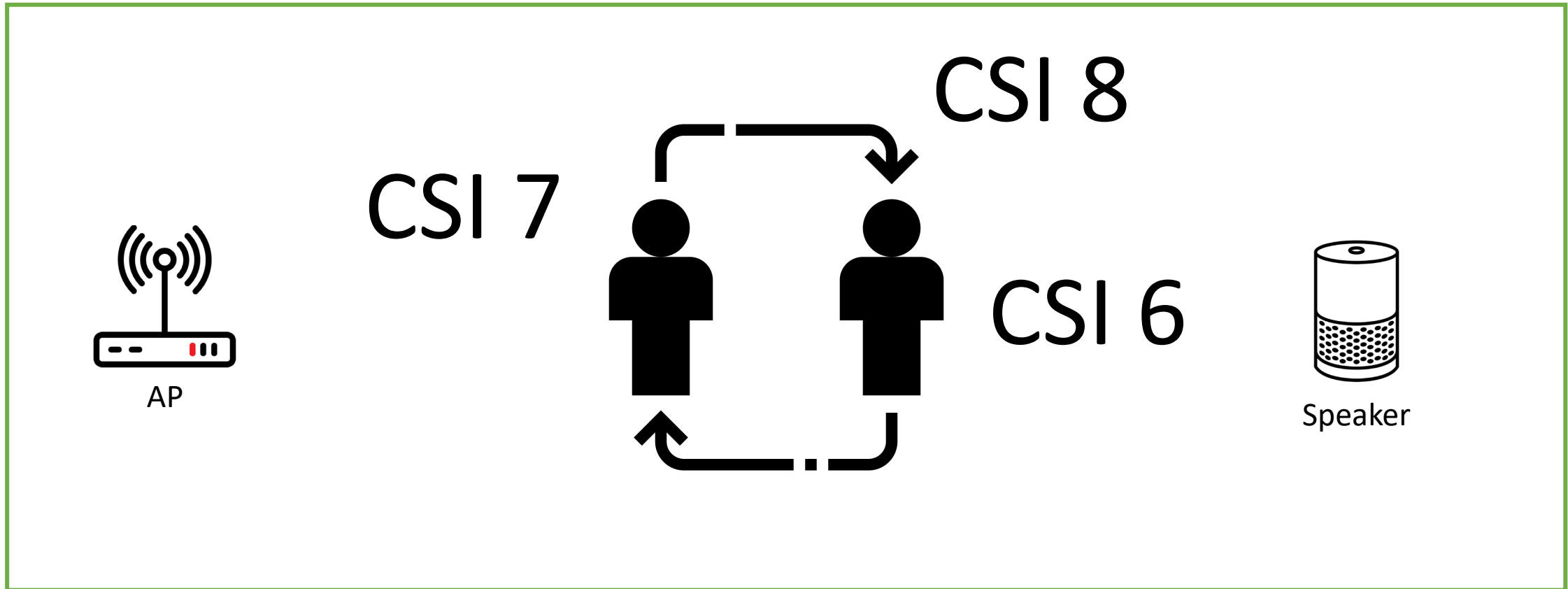
AP

CSI 10



Speaker

What is Wi-Fi Sensing?



IEEE 802.11bf

- Turning CSI into motion is currently proprietary
- 802.11bf TG is active
 - STAs to inform other STAs of capabilities
 - Initiate sensing sessions
 - Exchange sensing feedback and information
 - 1 – 7.125 GHz and 45+ GHz
- Target completion July 2024



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Wi-Fi Sensing Use Cases

Home Security

- Initial use case, currently available on the market
- Challenges:
 - Filtering out non-critical motion
 - Ceiling fans
 - Pets
 - Trees
 - The need for static, coverage-edge located devices

Aging in Place

- Fall detection
- Sleep monitoring
- Lack of motion alert
- Boundary alerts



Advanced Medical Applications

- Heartrate monitoring
- Breathing detection
 - Sleep apnea detection

Future Innovations – Gesture Sensing

- 802.11bf covers 45 GHz and above
- mmWave sensing could capture finger-level gestures and facial expressions
- Advancing more natural IoT control

Future Innovations – XR Integration

- Gesture sensing can replace XR gear
 - Room tracking
 - Body position down to finger accuracy
- More battery and weight available to the HMD allows for higher quality experience

Risks / Security Concerns



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Thank You!

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