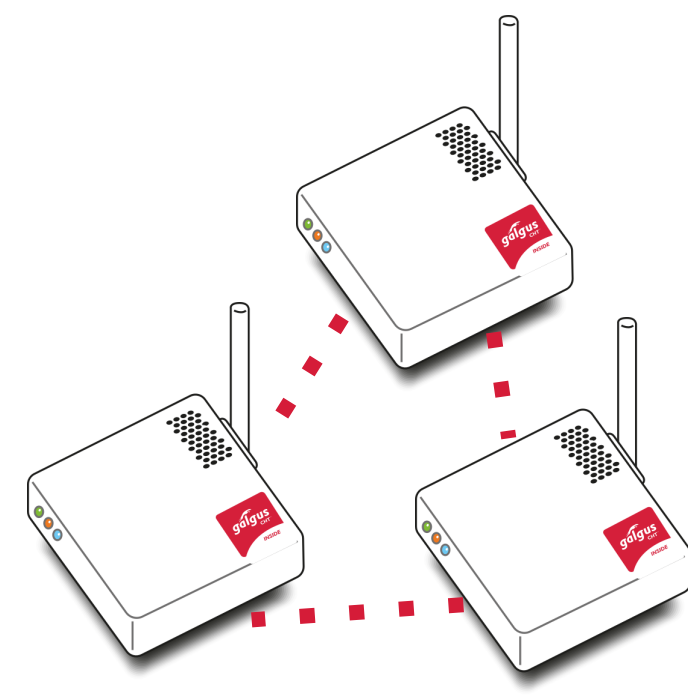


### About CHT™

- **CHT™**: Cognitive Hotspot Technology™
- Low-level embedded software which transforms Wi-Fi APs into intelligent devices



- Distributed and decentralized network
  - ✓ Without central controller
  - ✓ Without single point of failure
  - ✓ Without bottlenecks

• Patented technology: **PCT/ES2014/070196**

### Goals

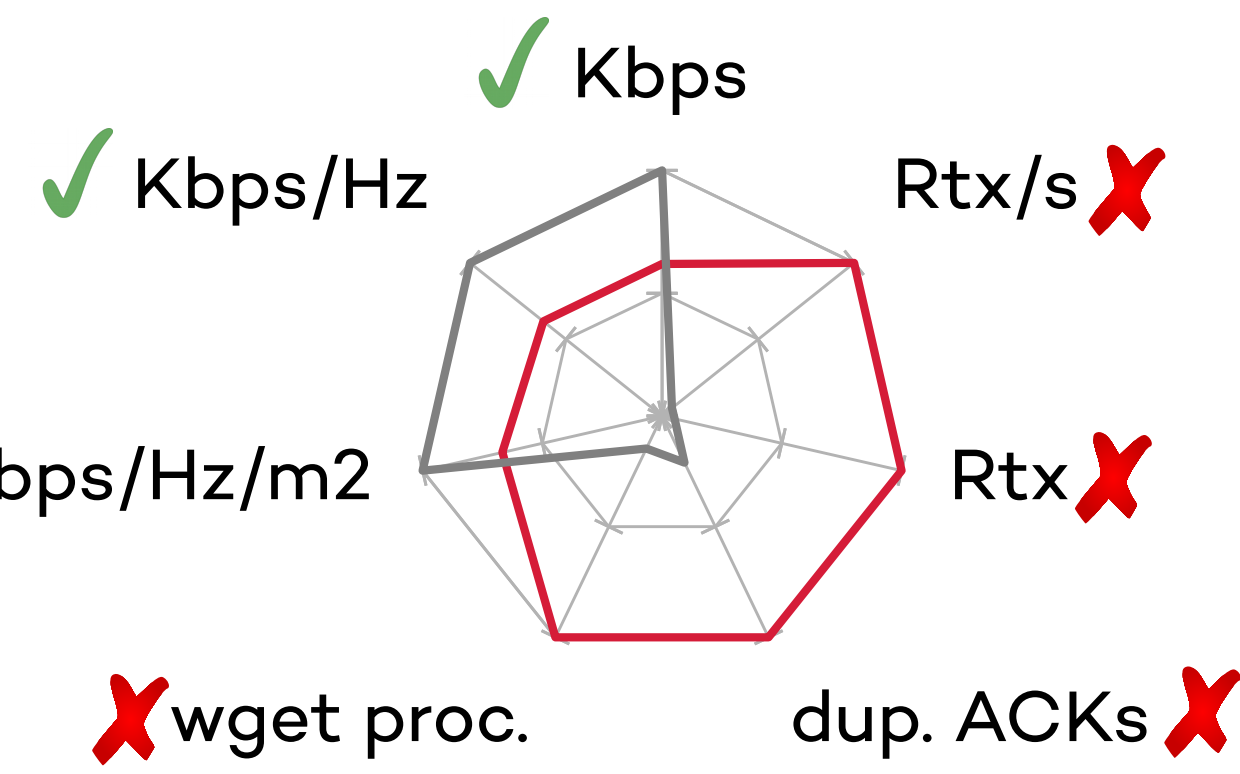
- Test some core functionalities of **CHT™** on a wide FIRE testbed, w-iLab.t laboratory
  - Interference-free and controlled lab
  - High number of Wi-Fi devices
  - Very versatile lab with mobility extension
- Experimentation in large and complex scenarios
  - Verification tests
  - Robustness tests
  - Performance tests
  - Scalability tests
- Push **CHT™** to its limits



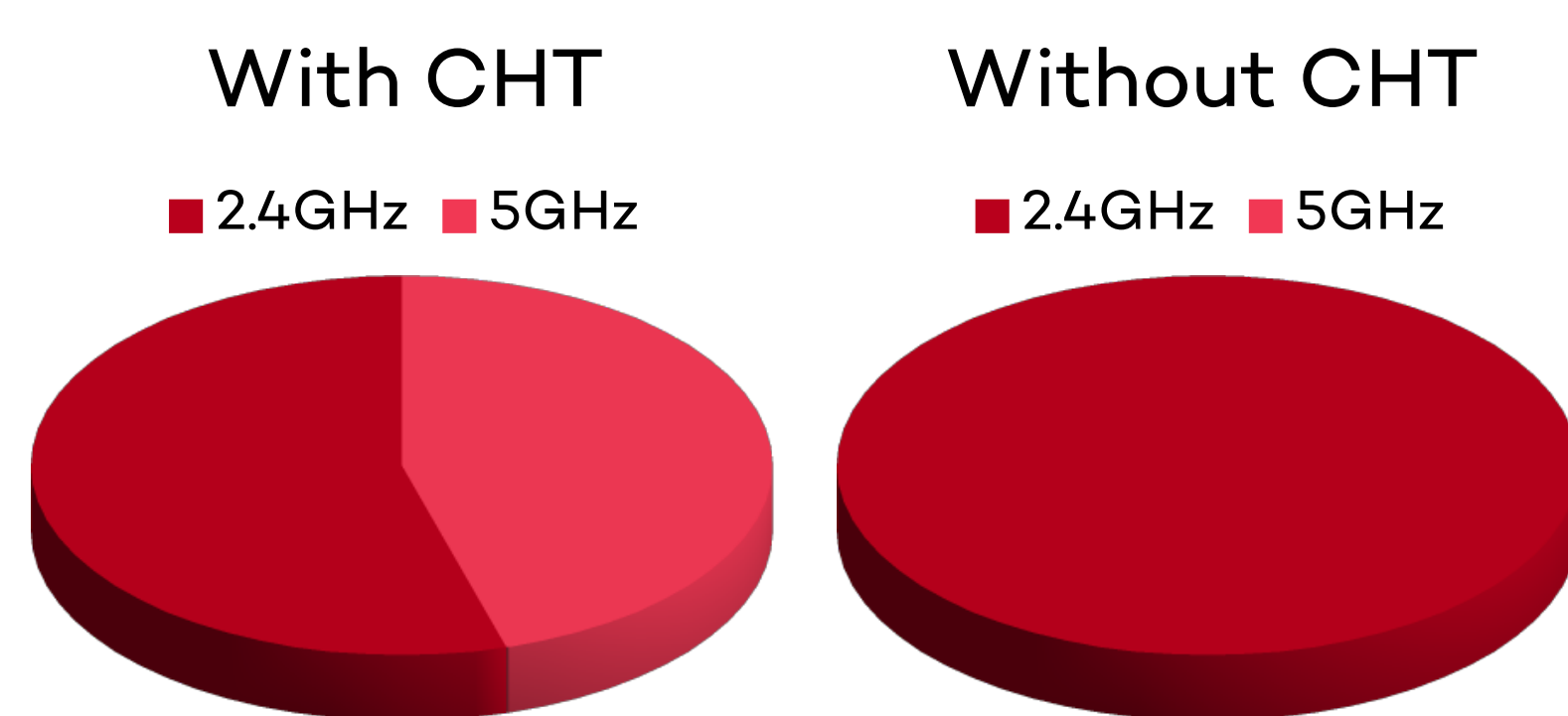
### Results

#### ACA

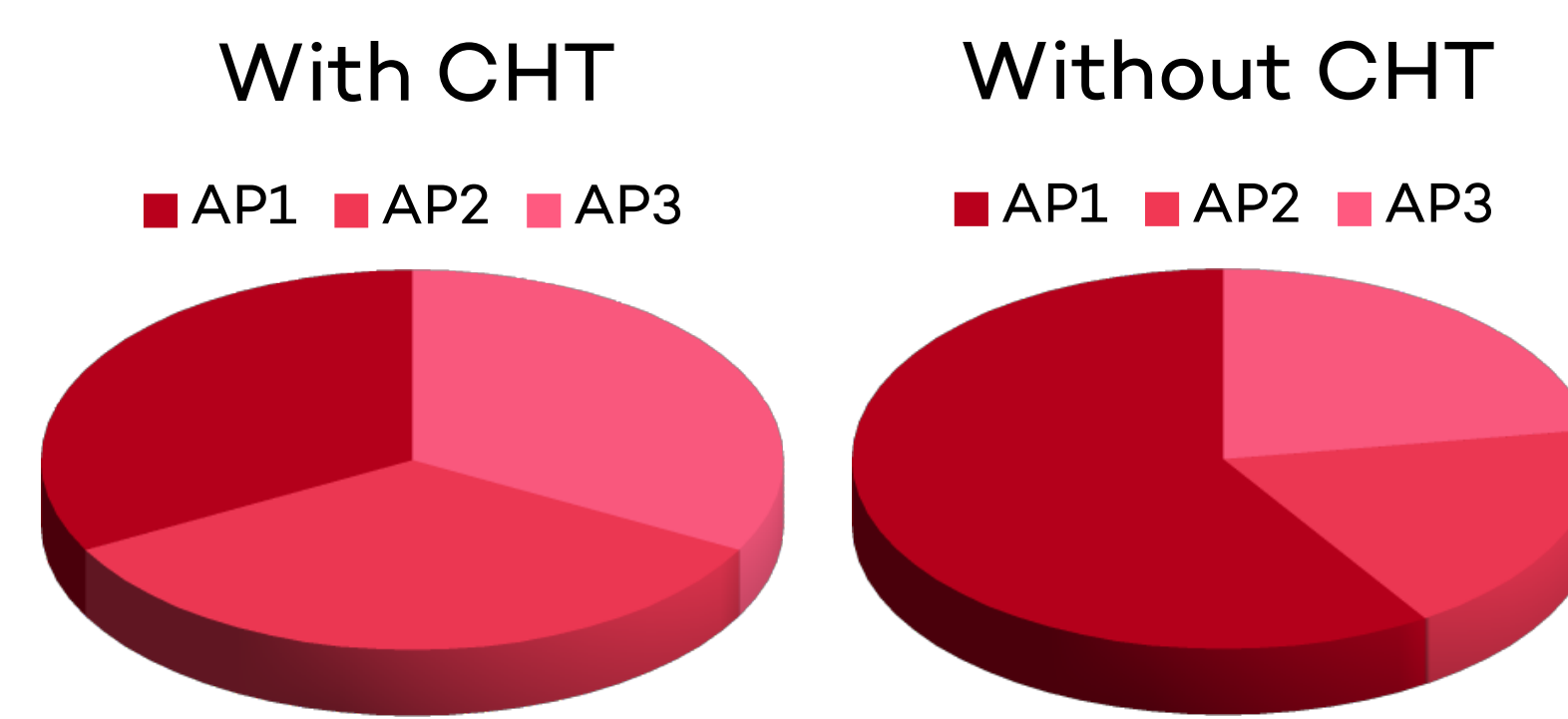
— With ACA — Optimal



#### Band steering

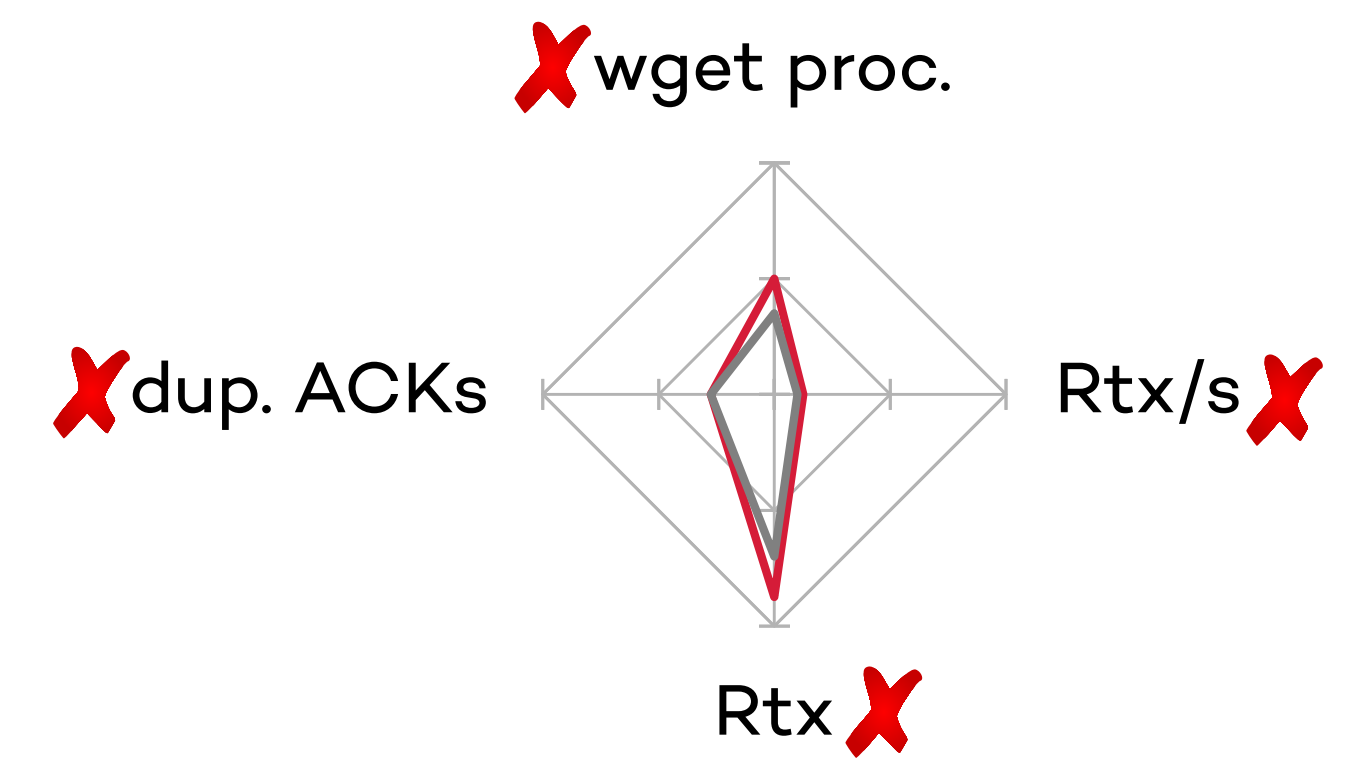


#### Load balancing

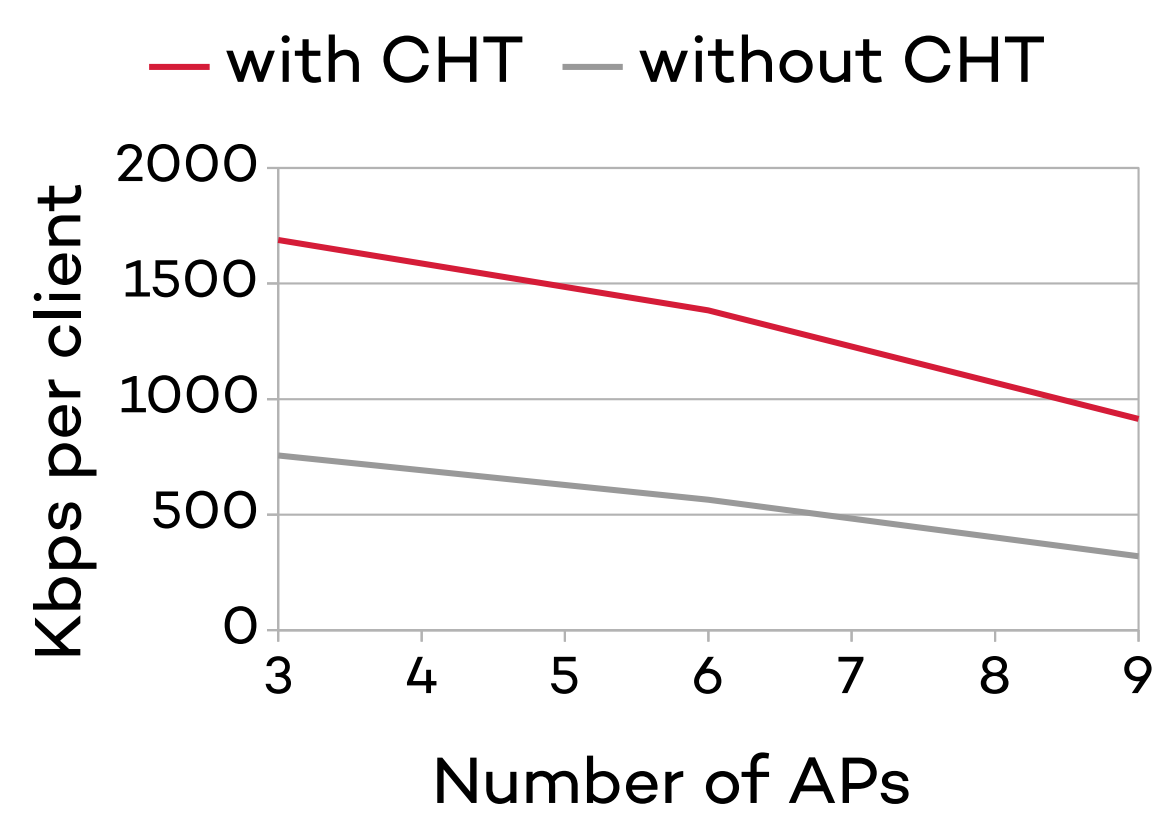


#### Smart roaming

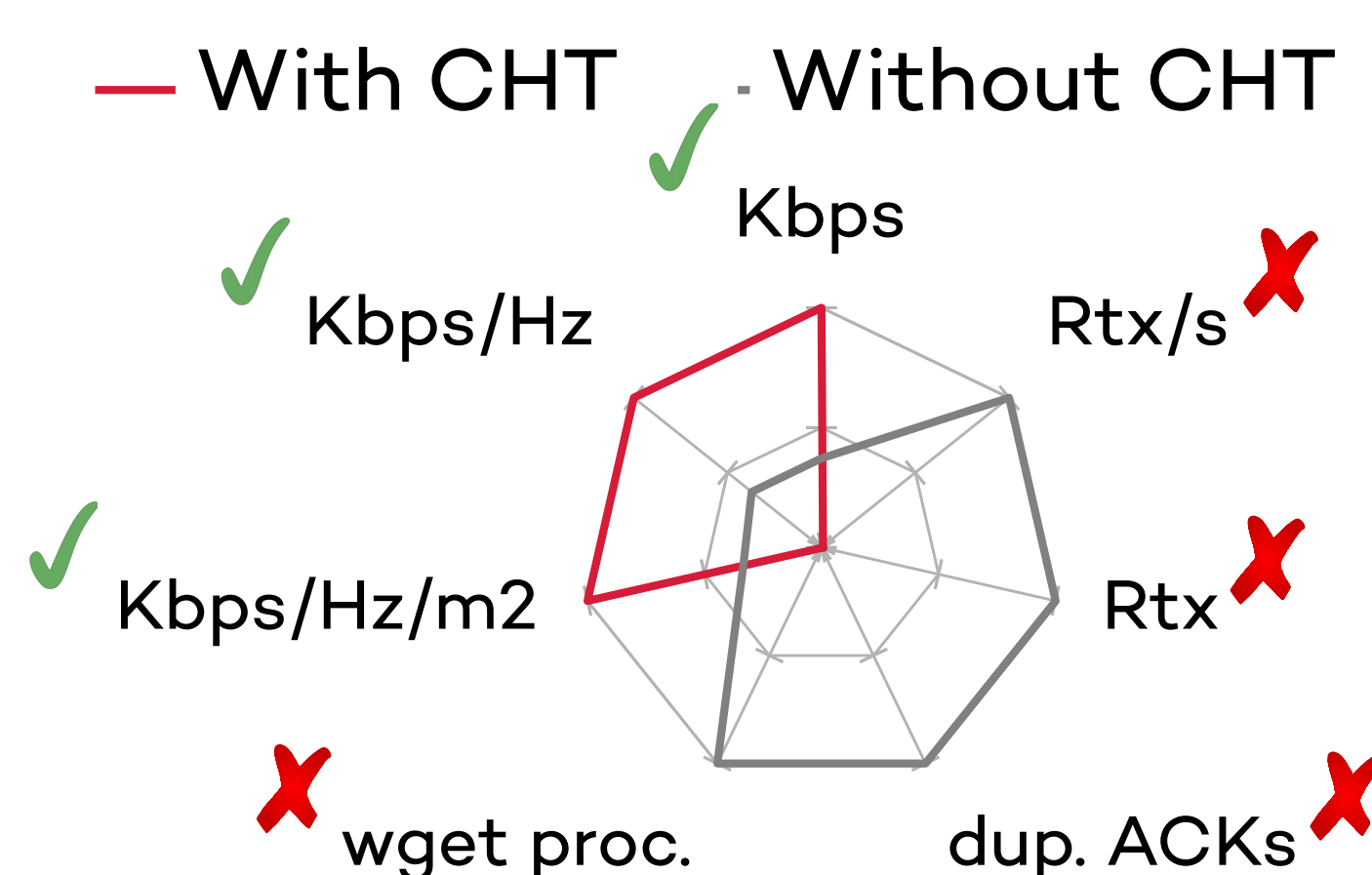
— With SR — Without SR



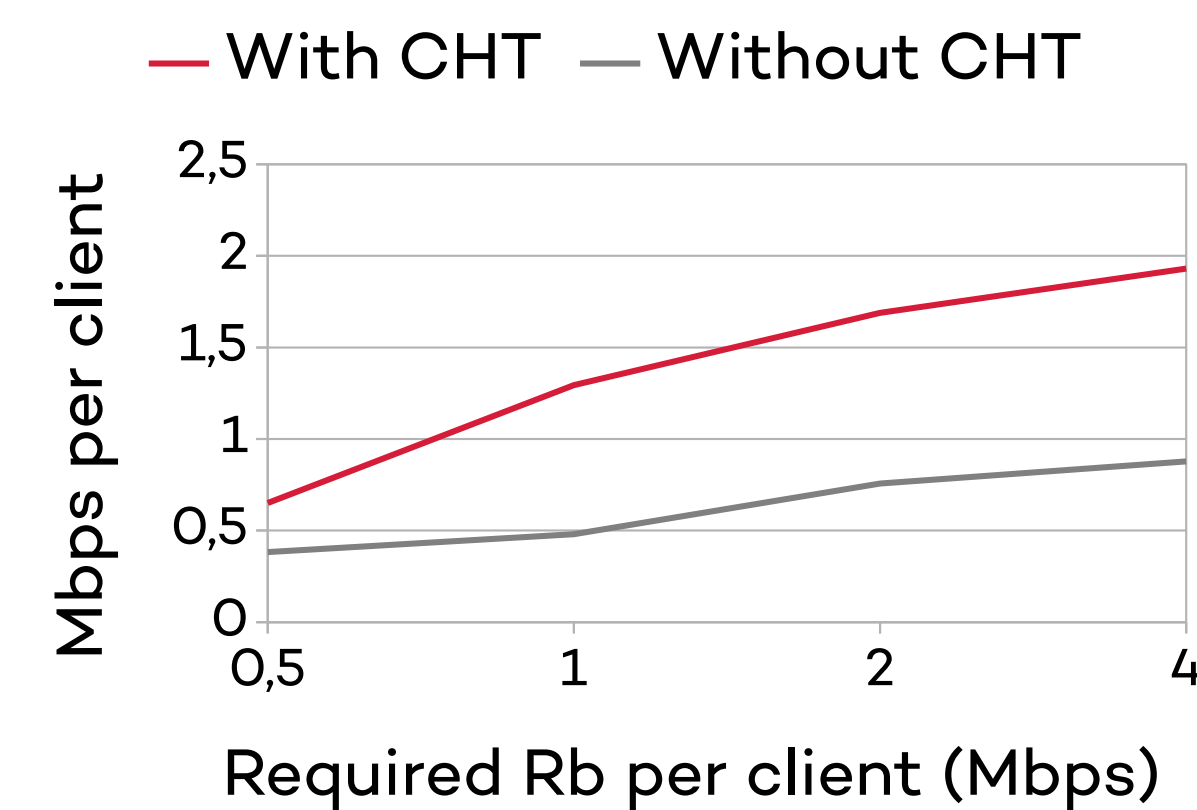
#### Scalability test



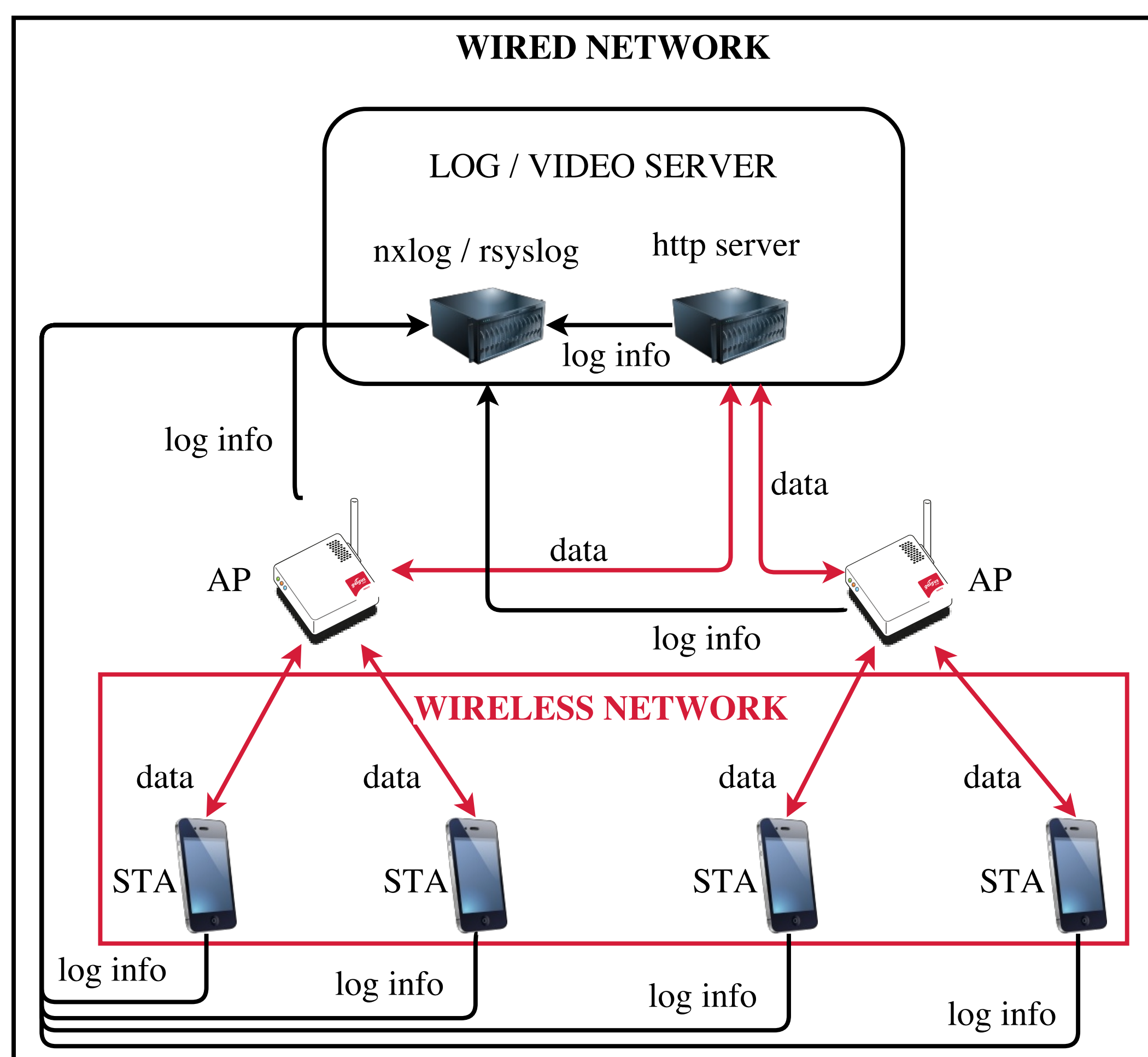
#### Performance test



#### Robustness test



### Set up



### Lessons learned

- **CHT™** performs quite-well in the w-iLab.t laboratory
- We have detected some limitations of our technology and experimentation methodology
  - Our ACA algorithm must be improved considerably
  - We must modify our methodology to consider mobile nodes
- Guidelines to evolve our software towards a multi-platform technology
- Results provide a lead way for the improvement of the design and functionalities of our technology, patent and product
- New competences in designing and executing experiments in a remote laboratory by using the jFed application