



Photo: Martin Braun

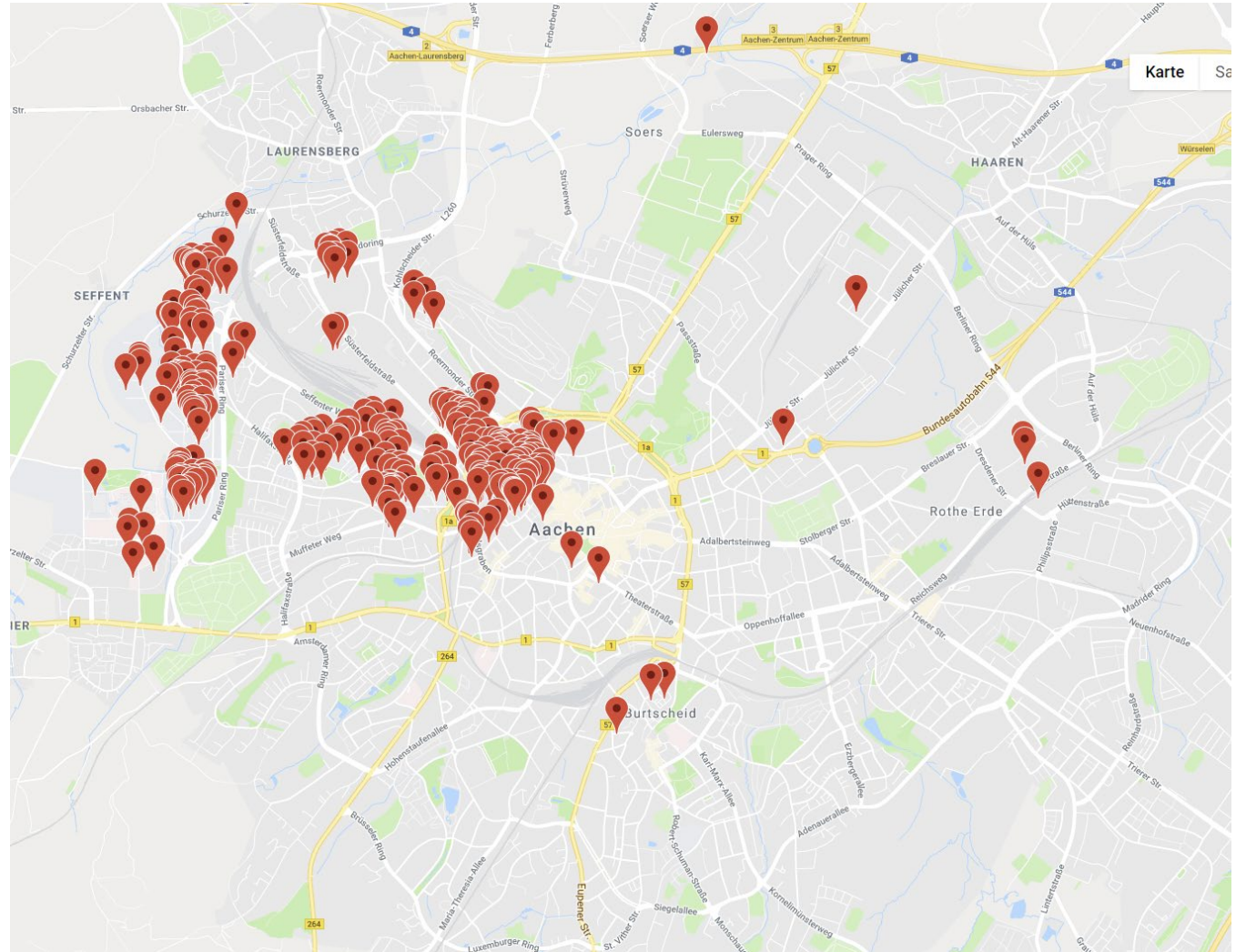
Finding a place to learn

A mobile study room guide with integrated room occupancy rate indicator

45,000
students

9,000
employees

300
buildings



Kartendaten © 2019 GeoBasis-DE/BKG (©2009)

Motivation



List on official website

REFINE LIST

▼ Teaching Unit

☒ All

☐ English Studies

☐ Civil Engineering

☐ Biology

☐ Electrical Engineering and Information Technology

+ More

▼ Institution

☒ All

☐ Faculty01

☐ Faculty02

☐ Faculty05

☐ Faculty06

+ More

▼ Open on

☒ All

☐ Monday

☐ Tuesday

☐ Wednesday

☐ Thursday

+ More

▼ --- Standort ---

☒ All

☐ Campus Höm

☐ Campus Melaten

☐ Central Campus / Center

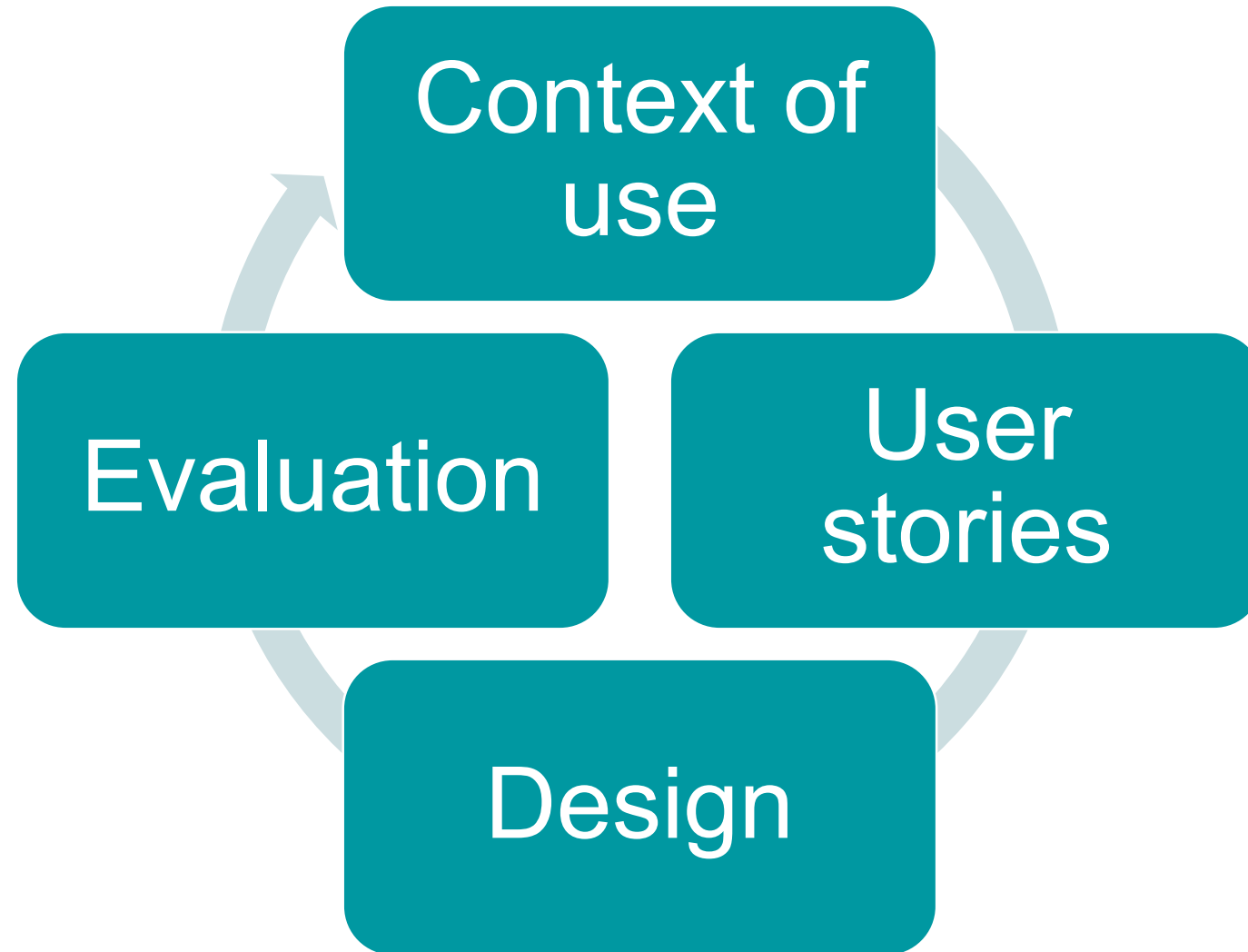
☐ Campus West

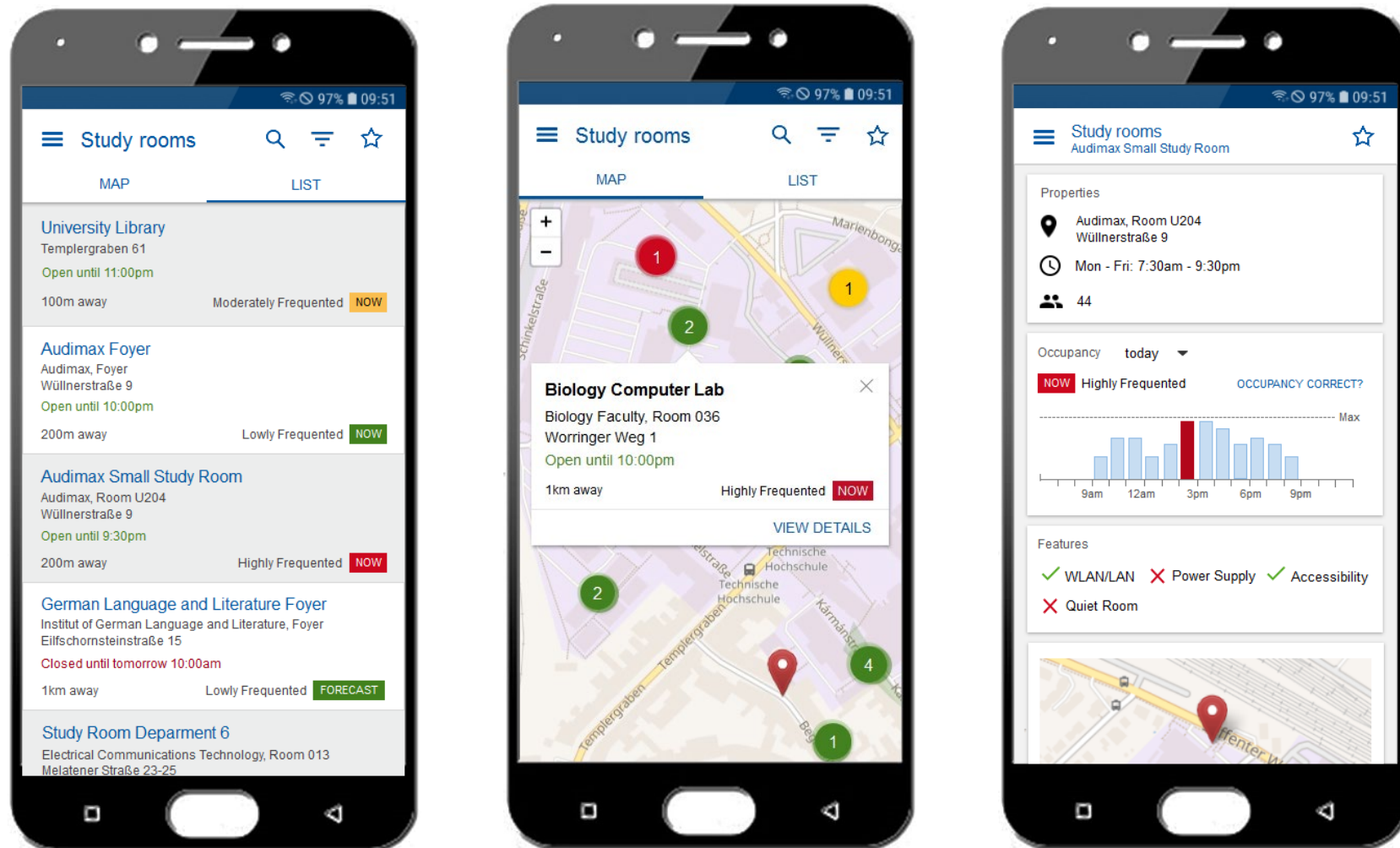
SHOWING 1 - 82 OF 82 RESULTS

SHOW RESULTS PER PAGE

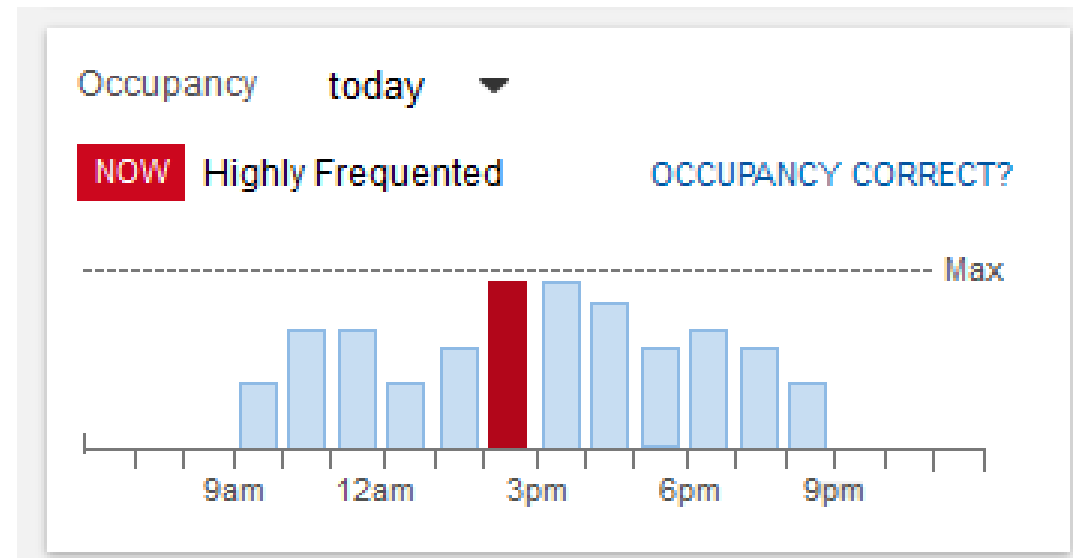
1-82

Room	Work stations	Opening Hours	Notice
<div>University Library </div> <div>Templergraben 61</div> <div>52062 Aachen</div>	256	Mon to Fri: 8:00am - 12:00pm Sat: 9:00am - 12:00pm Sun: 11:00am - 12:00pm	<div></div> <div>The building closes at 6pm.</div>
<div>Library 2 </div> <div>Templergraben 59</div> <div>52062 Aachen</div>	377	Mon to Fri: 8:00am - 12:00pm Sat: 9:00am - 12:00pm Sun: 11:00am - 12:00pm	<div></div> <div>The building closes at 6pm.</div>
<div>SE 001 </div>	30	Mon to Fri:	<div></div>

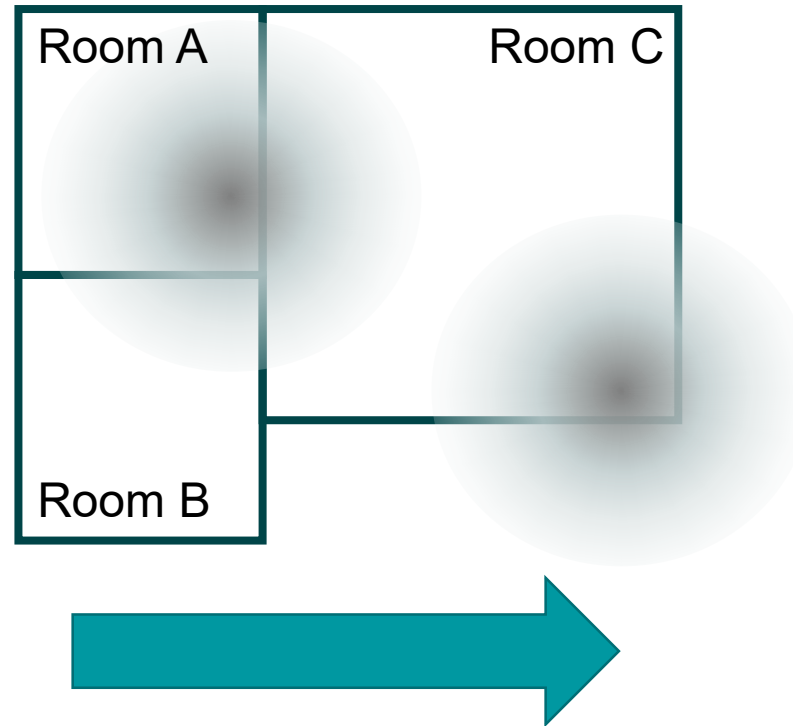




Occupancy



Wi-Fi access point data



```
[{  
  "name": "ap-2540-cafe18",  
  "device_count": 18  
}, {  
  "name": "ap-4280-26c0flur",  
  "device_count": 2  
}]
```

Room	Devices
A	11
B	4
C	5

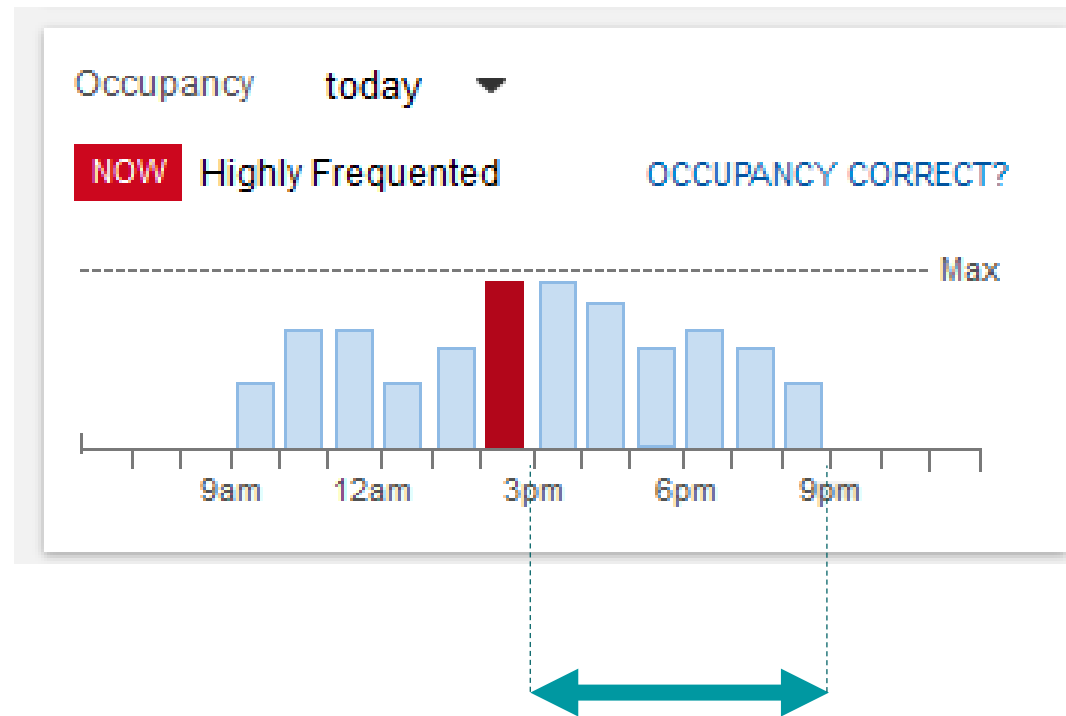
Mapping to users

Room	Devices
A	11
B	4
C	5

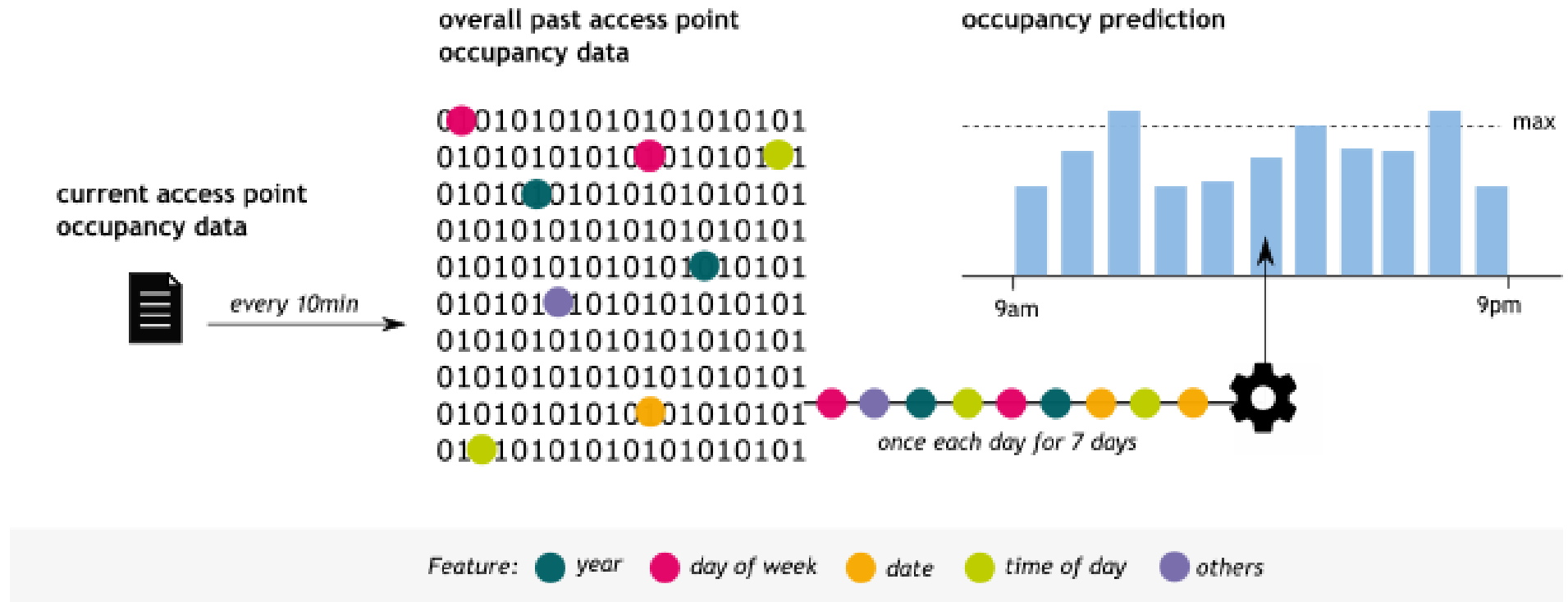


Room	Users
A	6
B	2
C	3

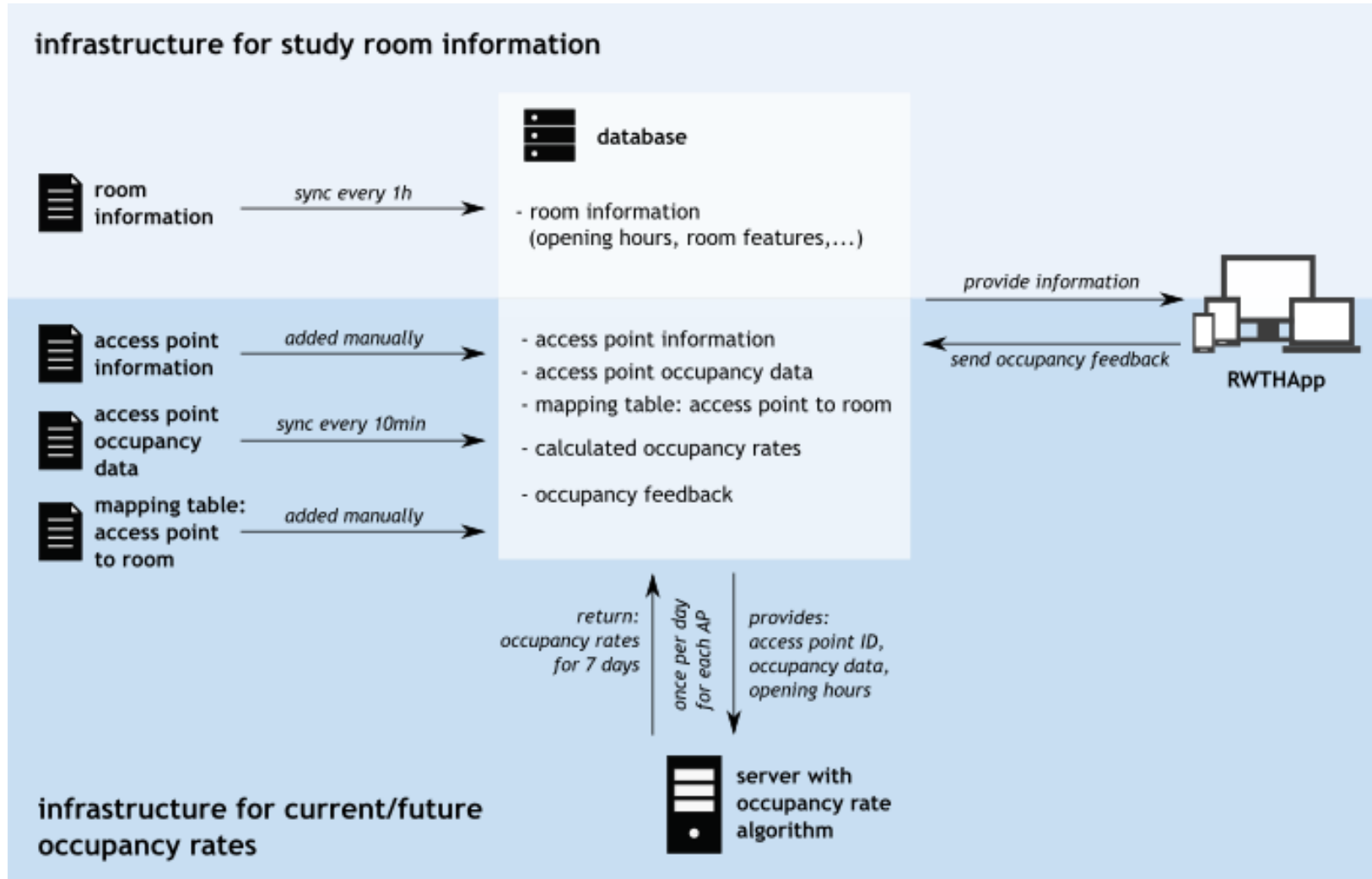
Predictions



Prediction algorithm



Infrastructure



Many systems involved

Room information not always up-to-date

Devices per access point -> devices per room
-> users per room

Conclusion

- Focus on use cases
- Privacy
- Future application:
 - Canteens
 - Lecture rooms
 - Meeting rooms
 - ...
- Available data has potential

Thank you