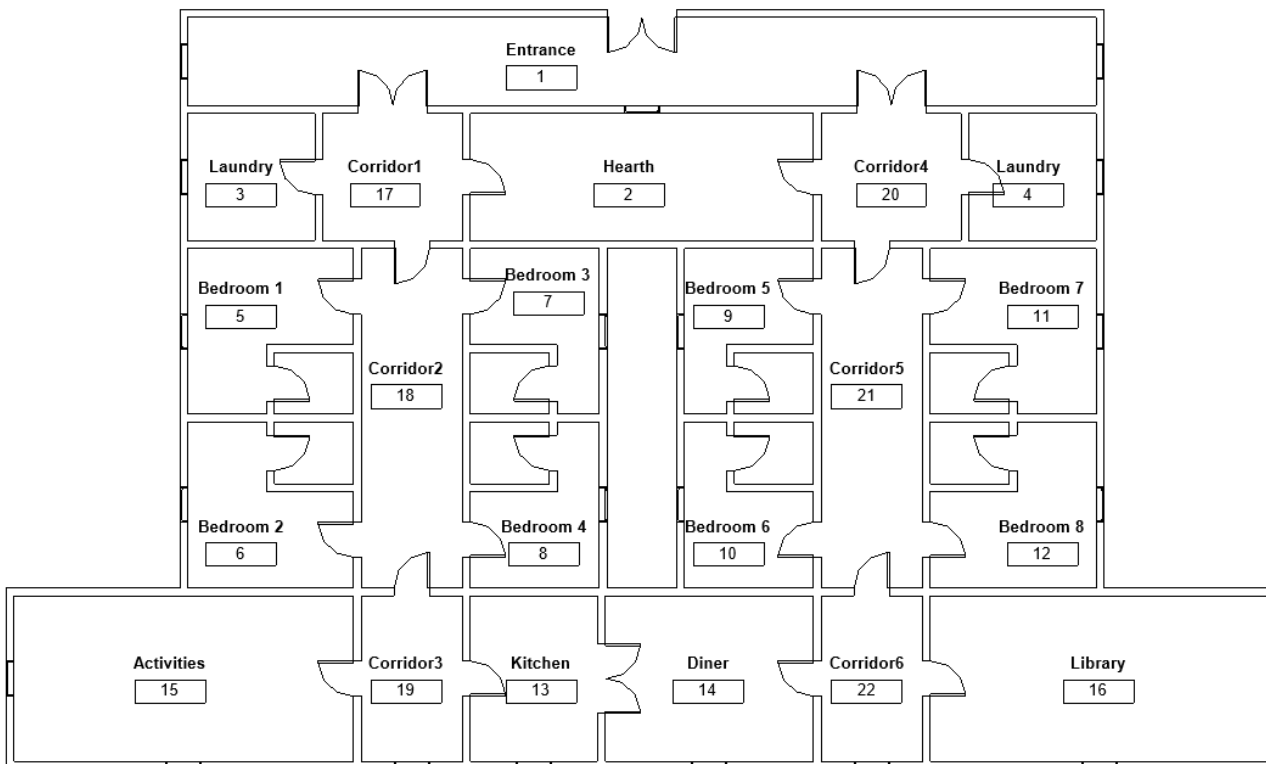# Elevating Smart Environments with AI-Optimized IoT Infrastructure Placement

Georgios Bouloukakis, georgios.bouloukakis@telecom-sudparis.eu
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PROJECTS 2023-2024

Transforming Urban Ecosystems With IoT

Fall detection	Response time < 500 ms Accuracy > 95%
Indoor positioning	Response time < 1 s Accuracy > 90%
Heart rate monitoring	Response time < 100 ms Accuracy > 99%
Noise detection	Response time < 2 s Accuracy > 80%

Transforming Urban Ecosystems With IoT

Fall detection
Response time < 500 ms
Accuracy > 95%

Indoor positioning
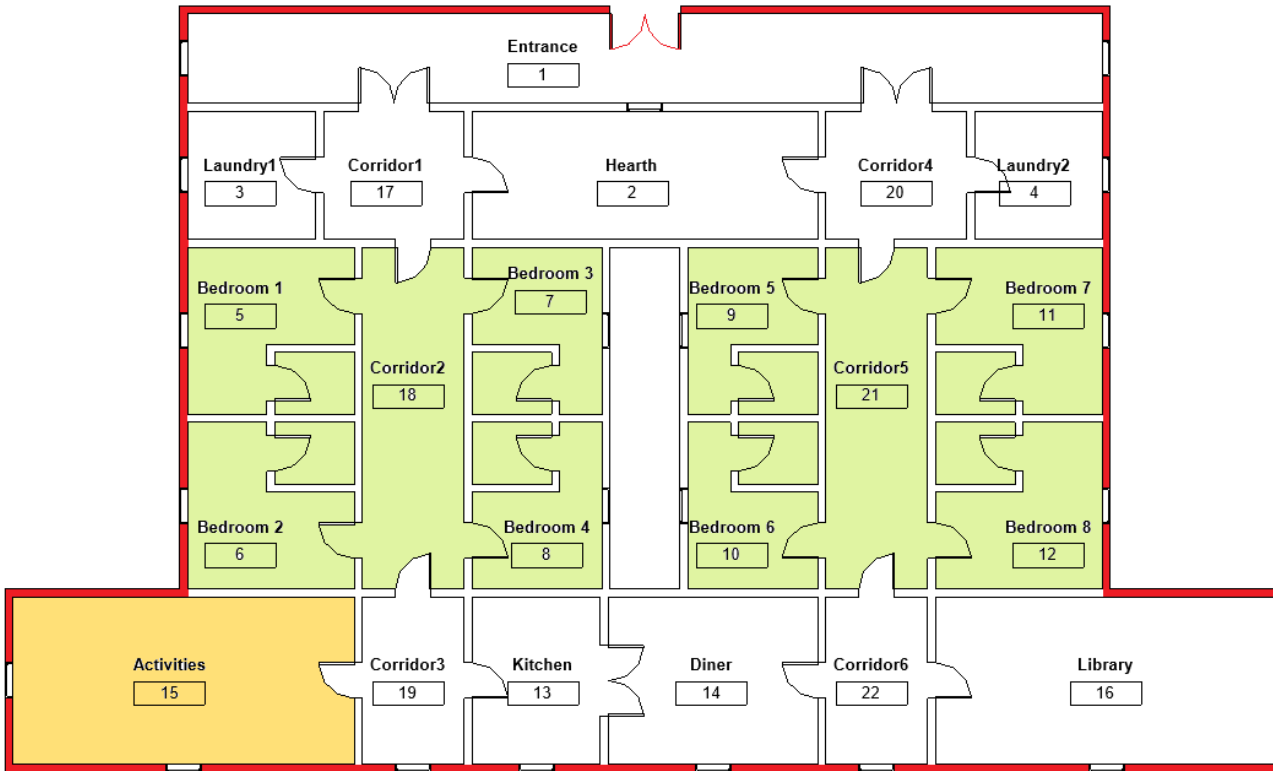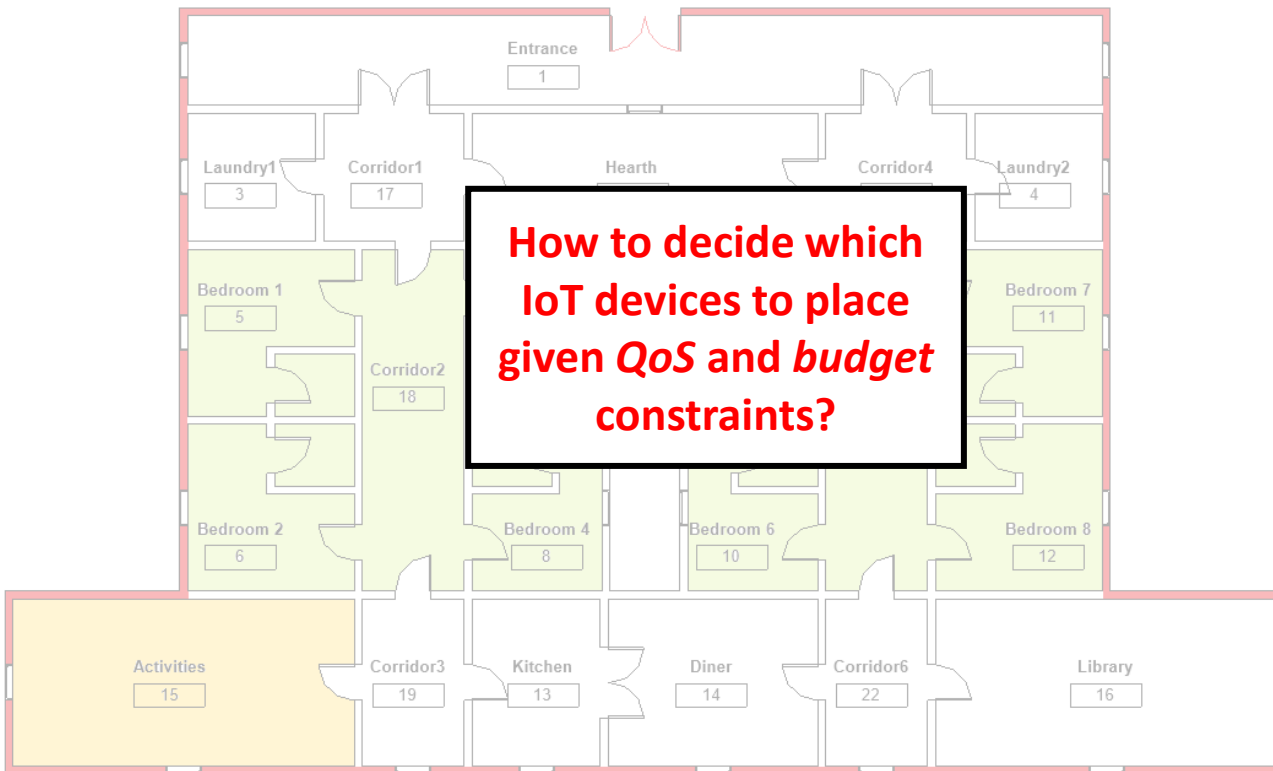Response time < 1 s
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Elevating Smart Environments with AI-Optimized IoT Infrastructure Placement

Transforming Urban Ecosystems With IoT

How to decide which IoT devices to place given *QoS* and *budget* constraints?

How to decide *where* to place IoT devices to satisfy the needed coverage constraints?

Fall detection — Response time < 500 ms / Accuracy > 95%

Indoor positioning

Heart rate monitoring — Response time < 100 ms / Accuracy > 99%

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Elevating Smart Environments with AI-Optimized IoT Infrastructure Placement

AI-optimized IoT Infrastructure Placement
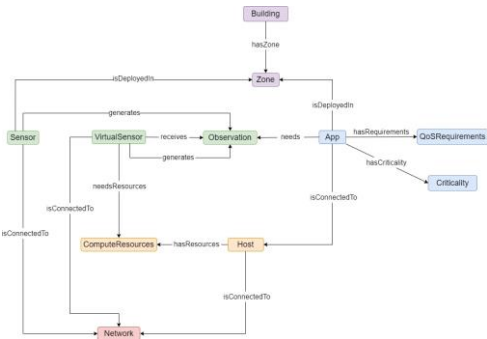
Space representation

Applications and system QoS constraints

Budget constraints

Automated IoT infrastructure placement

IoT-enhanced environment

Optimization techniques

AI planning techniques

AI analytics techniques

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