



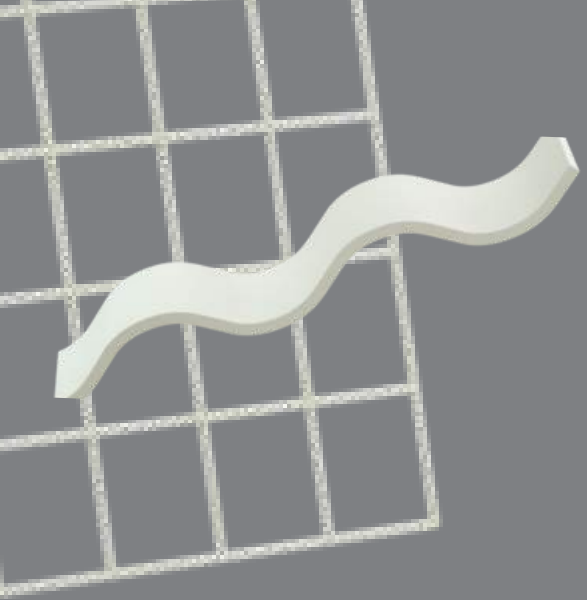
The Internet of Things

A complex technology simplified

What is the IoT?

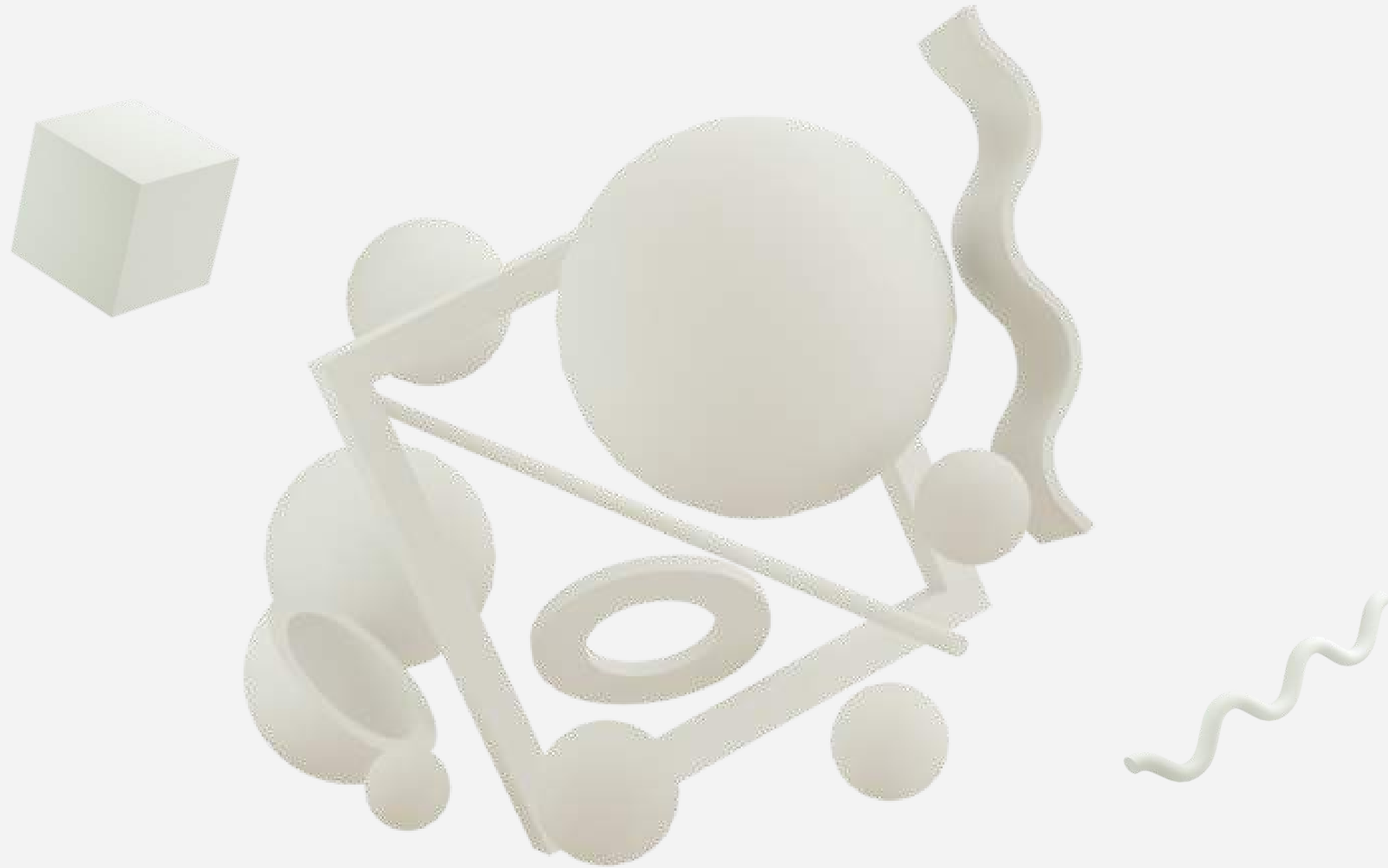
Presentations are communication tools that can be used as demonstrations, lectures, speeches, reports, and more.





The Development of the IoT





The IoT from the 1970s to today



The Rise of the IoT

Technologies that made IoT possible

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Top IoT applications

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The Pros and Cons of the IoT



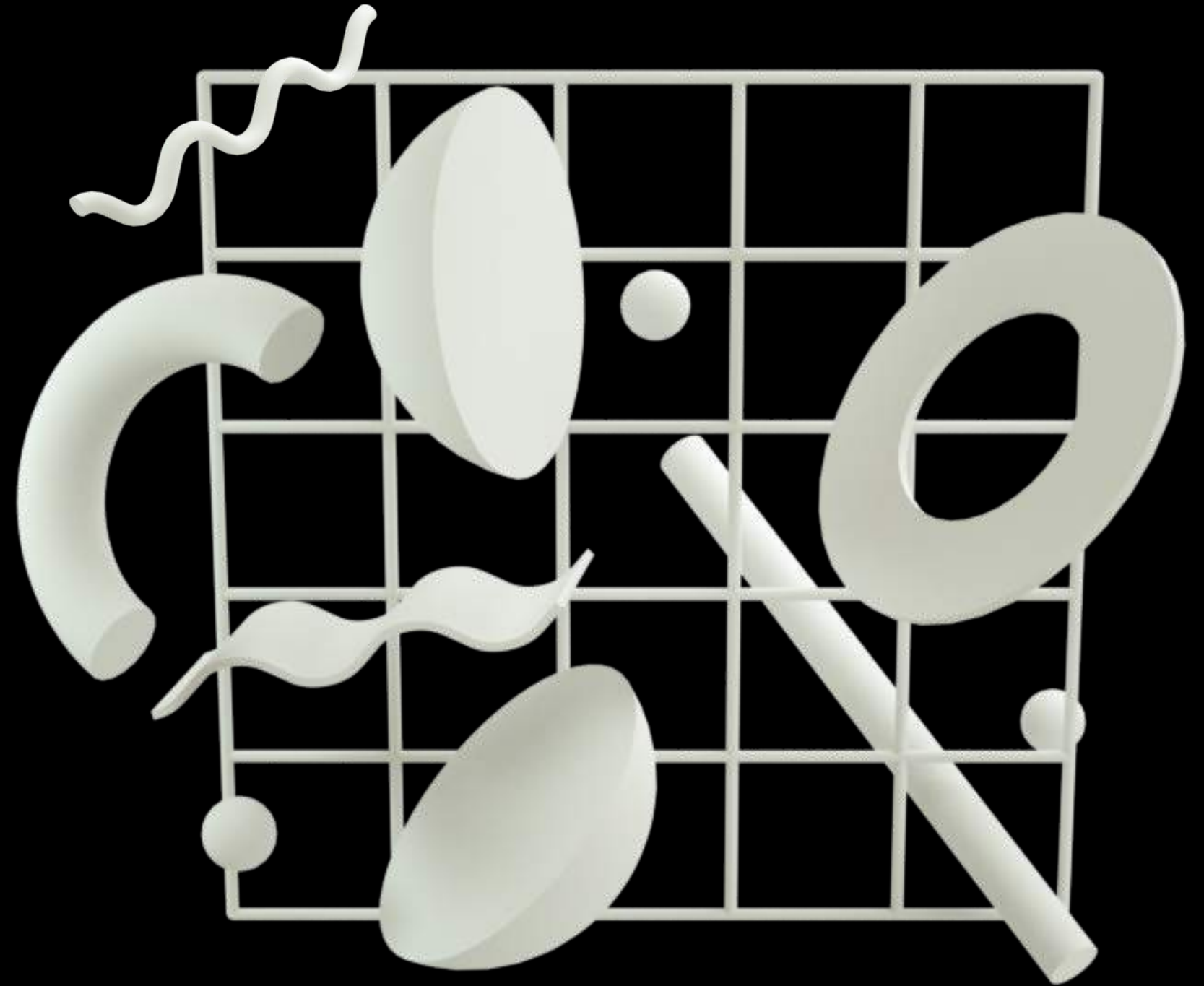
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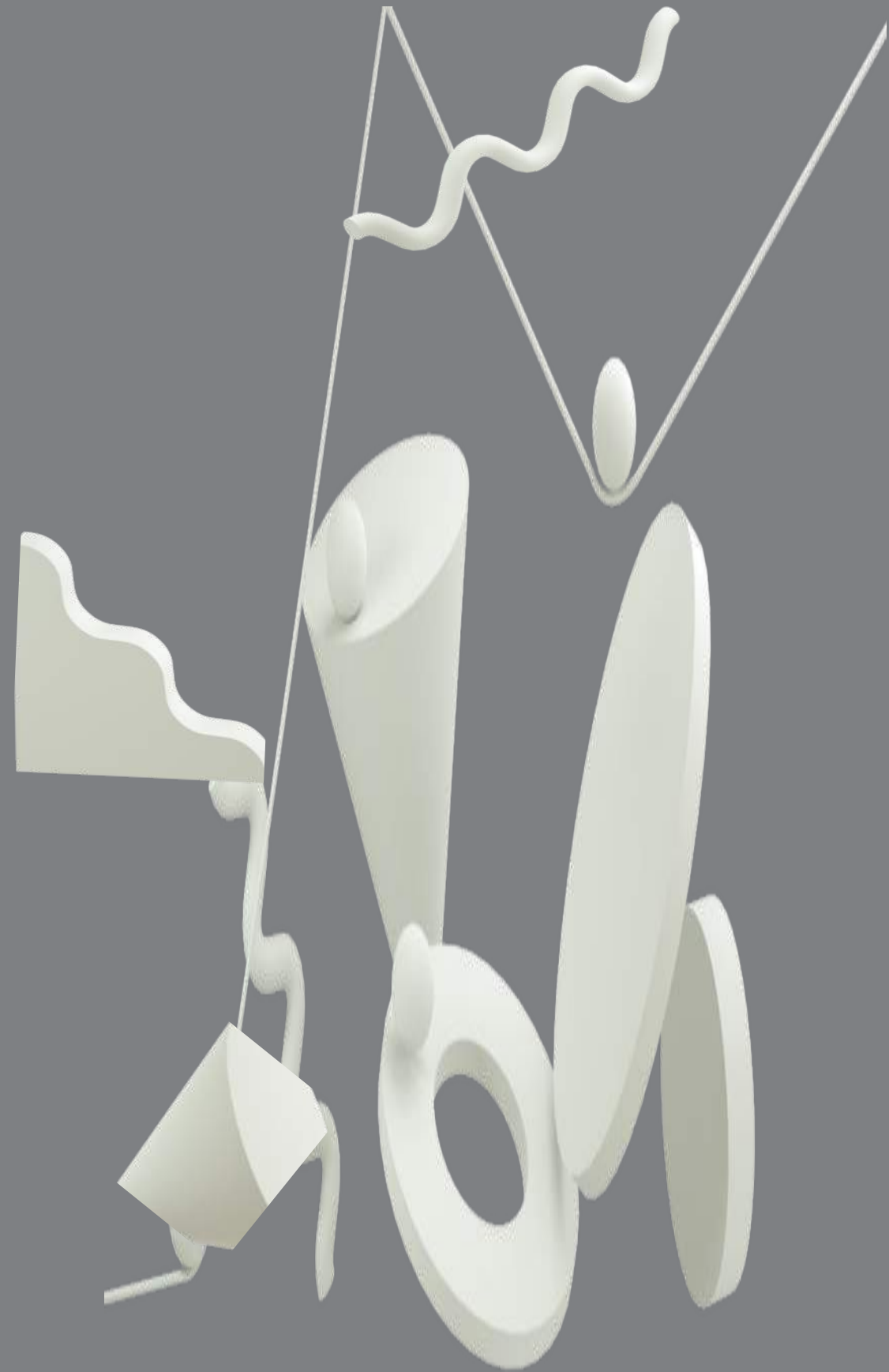
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IoT standards

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IoT standards

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The Challenges of IoT

Privacy

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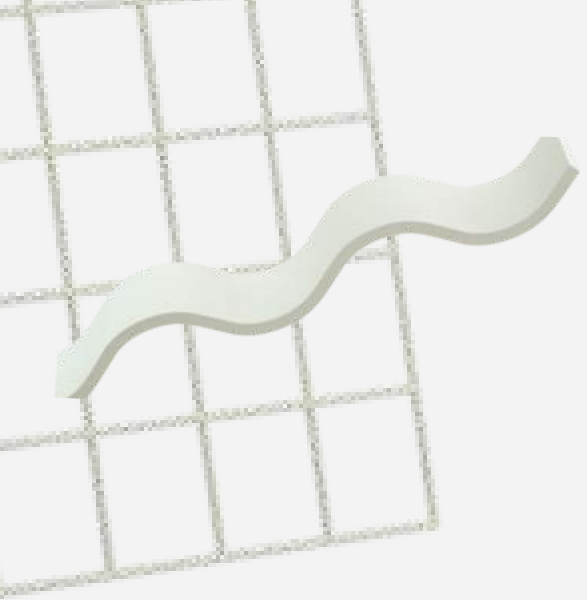
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Data storage and analysis

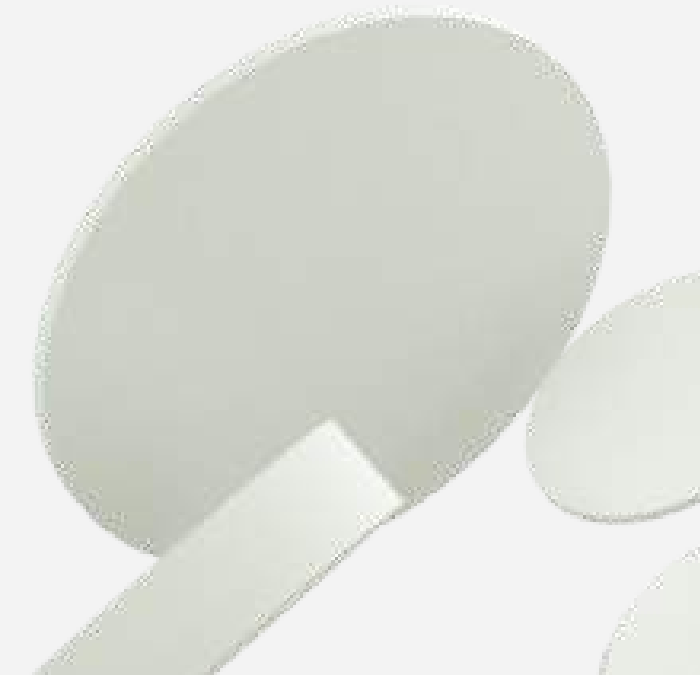
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The Future of IoT

Where to next?

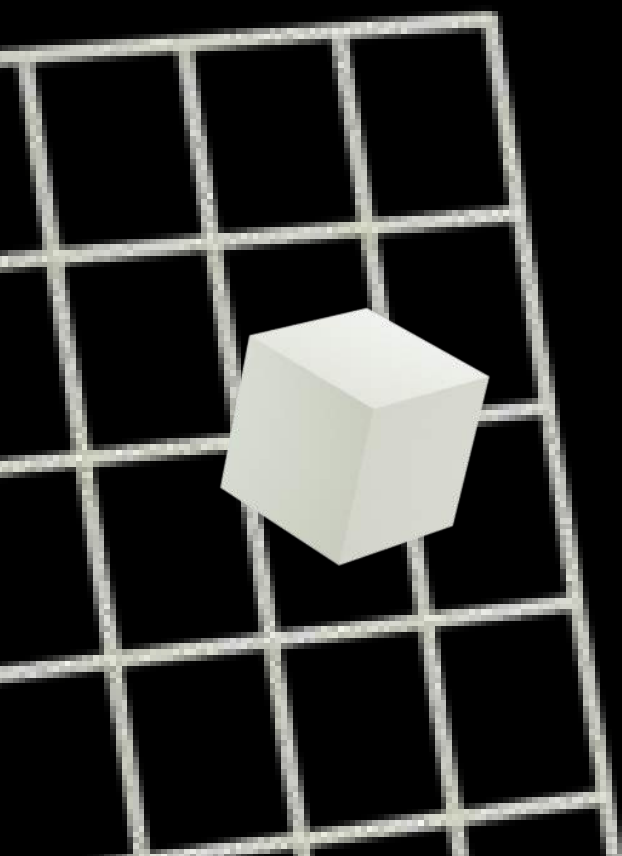
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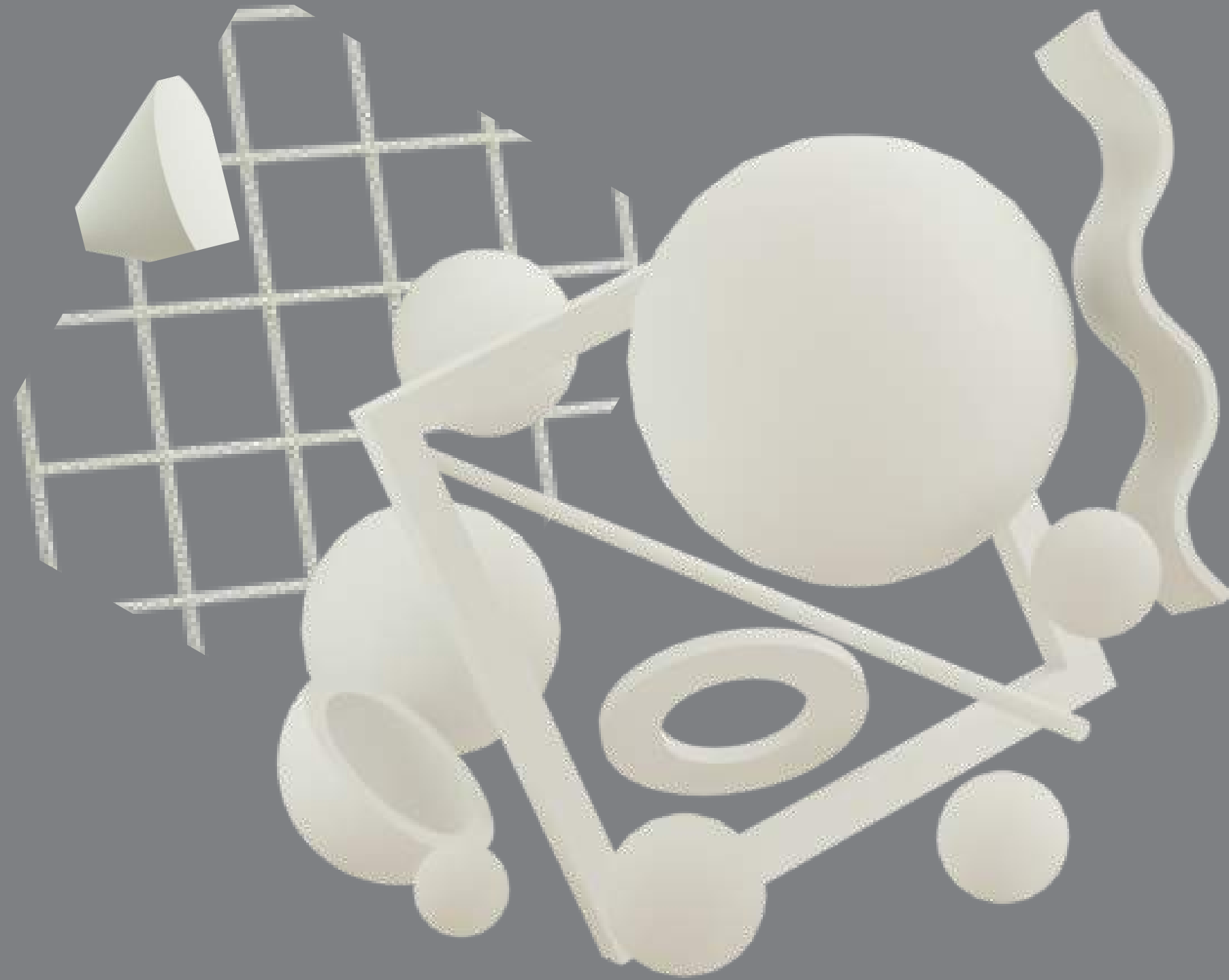




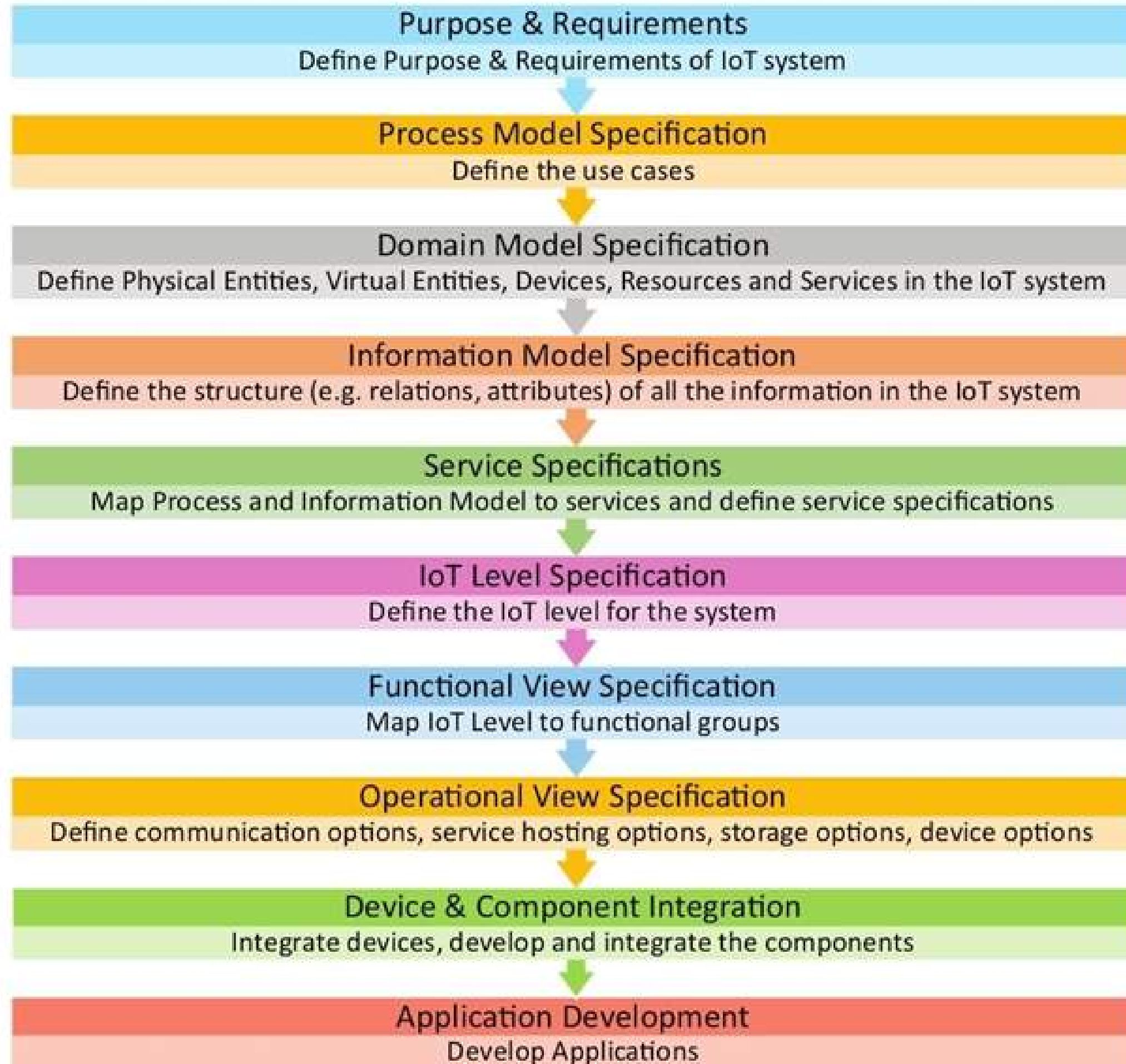
\$1.1 trillion

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IOT Design Methodology



Step 1: Purpose & Requirements Specification

First step in IoT system design methodology

Define the purpose and requirements of the system

System purpose, behavior and requirements are captured

System requirements can be

- Data Collection Requirements
- Data Analysis Requirements
- System Management Requirements
- Data Privacy & Security Requirements
- User Interface Requirements

IoT System Design : Home Automation

Step:1 - Purpose & Requirements

- Purpose : A system that allows controlling of the lights in a home remotely using a web application
- Behaviour : The home automation system should have auto and manual modes.

Auto mode - the system measures the light level in the room, switches light when dark.

Manual mode - the system provides the option of manually and remotely switching on/off the light.

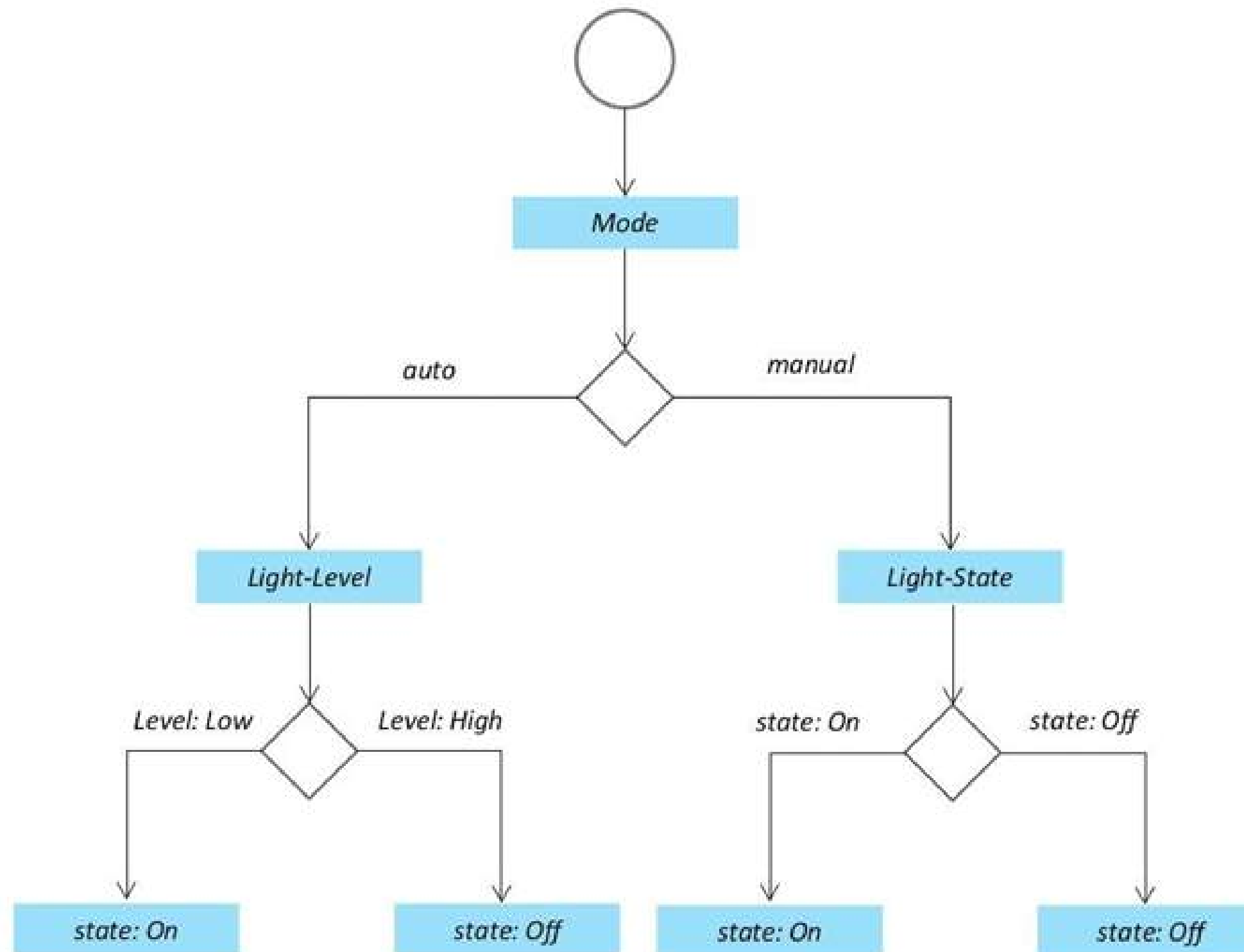
- System Management Requirement : The system should provide remote monitoring and control functions.
- Data Analysis Requirement : system should perform local analysis of data
- Application Deployment Requirement : The application should be deployed locally on the device, but should be accessible remotely.
- Security Requirement : The system should have basic user authentication capability.

Step 2: Process Specification

- The second step in the IoT design methodology is to define the process specification. In this step, the use cases of the IoT system are formally described based on and derived from the purpose and requirement specifications.

IoT System Design : Home Automation

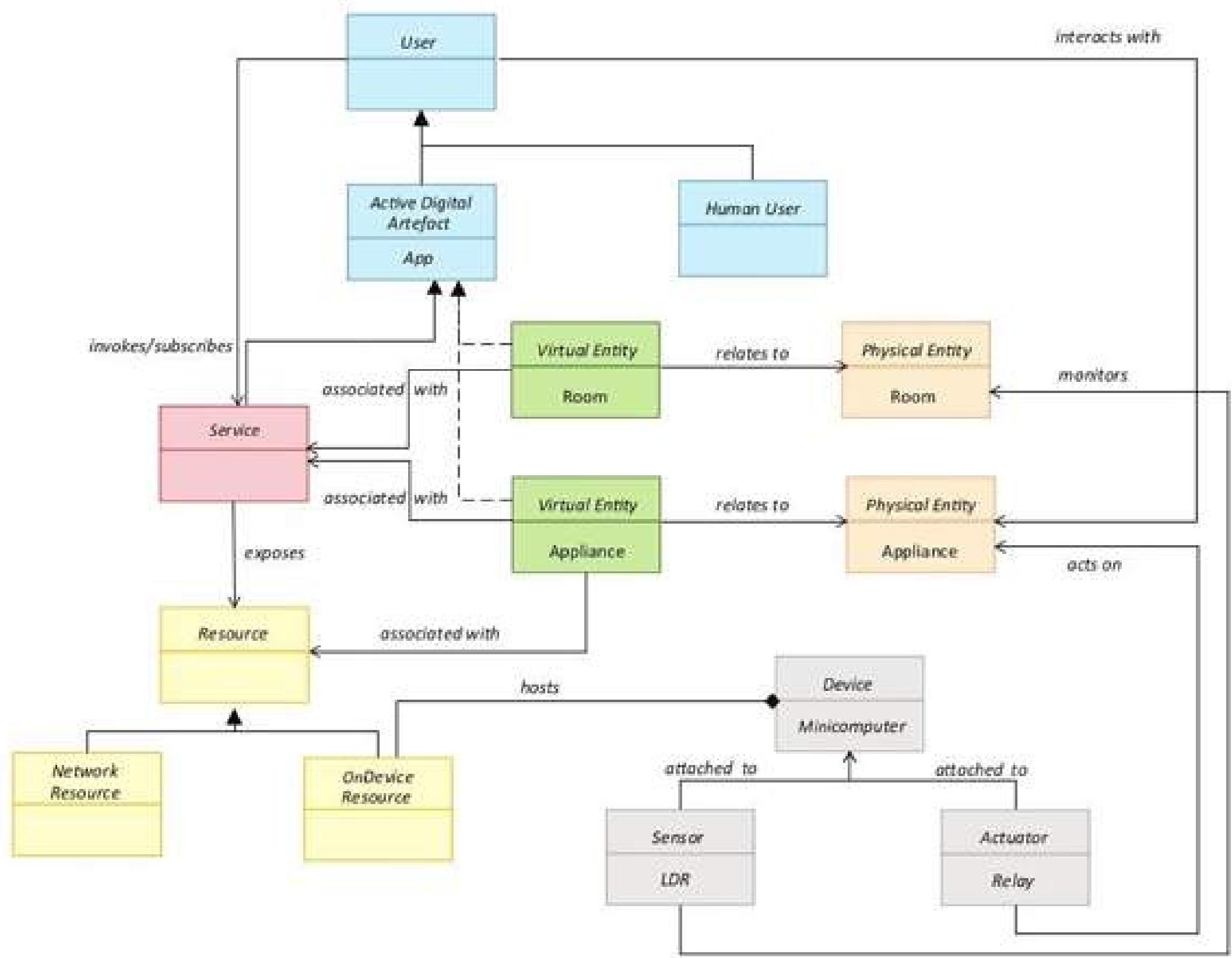
Step : 2 - Process Specification



Step 3: Domain Model Specification

- Third step in the IoT design methodology
- Domain model describes the main concepts, entities and objects in the domain of IoT system to be designed
- Domain model defines attributes of objects and relationships between objects
- Domain model provides an abstract representation of concepts, objects and entities in IoT domain, independent of any specific technology or platform
- With the domain model, the IoT system designers can get an understanding of the IoT domain for which the system is to be designed.

Step : 3 - Domain Model Specification



- One-way Association
- Generalization/Specialization
- Aggregation Relationship

Type: Entity, service, resource, device, attribute

Step 4: Information Model Specification

- Fourth step in the IoT design methodology
- Information Model defines the structure of all the information in the IoT system, for example, attributes of Virtual Entities, relations, etc.
- Information model does not describe the specifics of how the information is represented or stored.
- To define the information model, we first list the Virtual Entities defined in the Domain Model.
- Information model adds more details to the Virtual Entities by defining their attributes and relations.

Step : 4 - Information Model Specification

