Documenting a Project

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What is Documentation?

- A record of the work done
- Substantiate that the Project Goals/requirements are met
- Establish Traceability – what is done; when; who

Why should one Document a Project

- Establish the Quality and provide a basis for Understanding and continuing the work done
- It is also essential that the documentation is well arranged, easy to read, and adequate.
- Dissemination of ideas and results
- Good work (software for example) could be ruined by a poor report, that doesn't justify the efforts and the work done

Systems View of a Project

- Take a holistic view of the project – an Analytical view to Manage and Problem Solving

- Systems Approach invoives -

    - **Systems philosophy**: an overall model for thinking about things as systems

    - **Systems analysis**: problem-solving approach that requires:

    - defining the scope of the system,

    - dividing it into components,

    - identifying and evaluating its problems,

    - examining alternative solutions, and

    - identifying a satisfactory solution

    - **Systems management**: address business, technological, and organizational issues before creating or making changes to systems

Main Documentation Parts

- Developer document
  - Design Doc
  - Technical Doc
- Operational or User document

Developers Project Document

- **Introduction**
  - Problem Statement and Scope
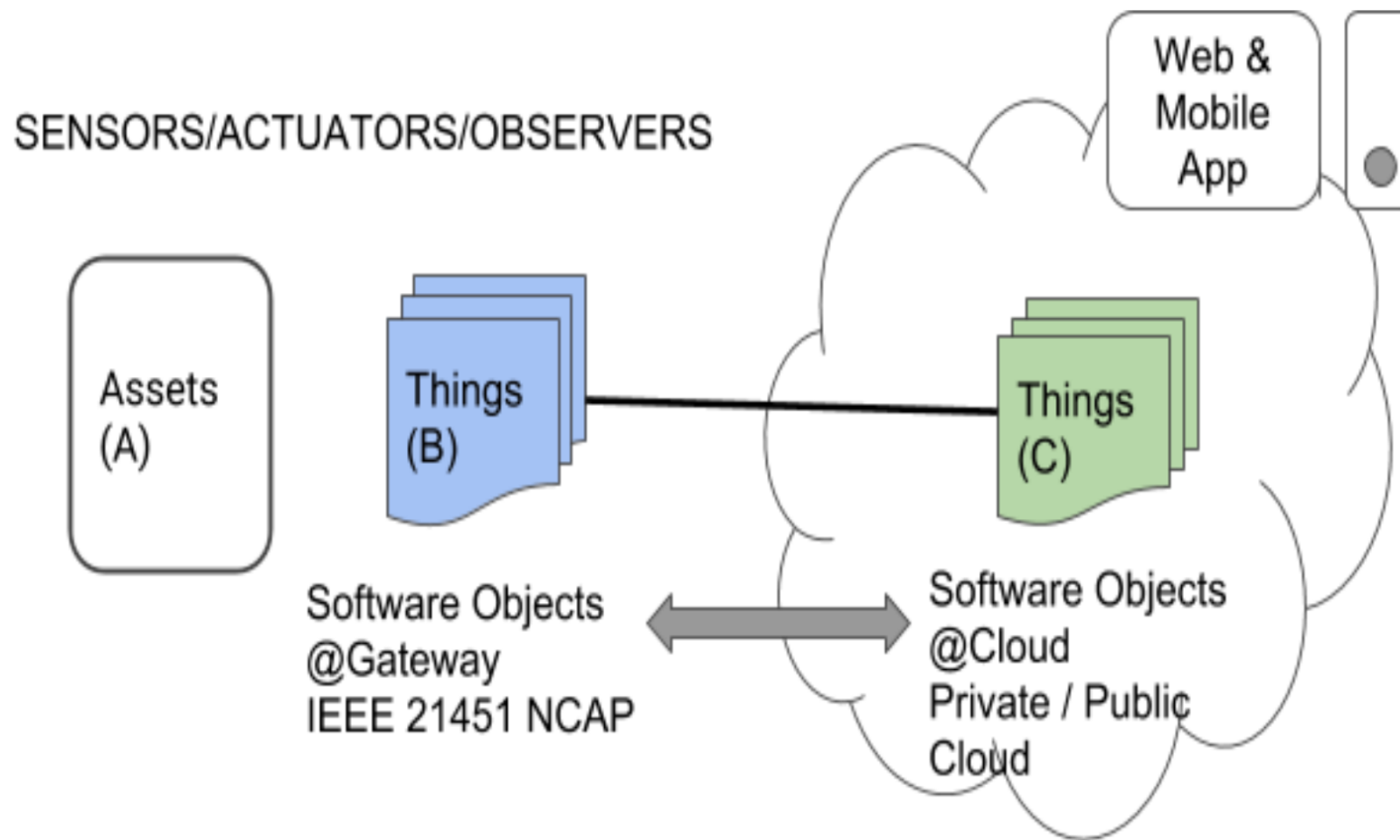 - Purpose of the System
  - Overview of the System

- **Design Document**
  - System Requirements (in non-tech terms)
  - System Specifications (technical terminology)
  - Stakeholders
  - Deign Entities / Main Components
  - Design Details
    - Conceptual Flow
    - Entity Interaction
  - Operational Requirements
    - System Needs
    - UI design
    - Analytical System
  -

User or Operational Document

- Introduction – Objective and Scope

- Product Operational requirements

  – Operating Environment; OS; Power and other interfaces

- System Working Model

  – Base state

  – Working state

SENSORS/ACTUATORS/OBSERVERS

Assets (A)

Things (B)

Software Objects @Gateway IEEE 21451 NCAP

Things (C)

Software Objects @Cloud Private / Public Cloud

Web & Mobile App

The above diagram simplifies the overall concept of transforming 'assets' to 'things'. The

IoT Project Components

- Design Docs
- Hardware Specifications
  - Devices
- Communication (including data format)
- Software Specifications
- Data Handling Model
- Integration framework
- Data Visualization / Analysis framework

Documentation Standards

- Ref; A standard for Software Documentation

  [https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=625327]

- IEEE Draft Standard for Software Design Descriptions

- IEEE 24748-2-2018 - ISO/IEC/IEEE International Standard - Systems and software engineering-- Requirements for managers of information for users of systems, software, and services