Documenting a Project

Embedded Systems Workshop

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What do you think is the best way to show your Project Outcomes?

- Presentation
- Demo (Live or Video recorded)
- Report

Does Outcome alone capture the process and your efforts?

- ❑ Yes
- ❑ No
- ❑ Maybe

So, a well documented Project is

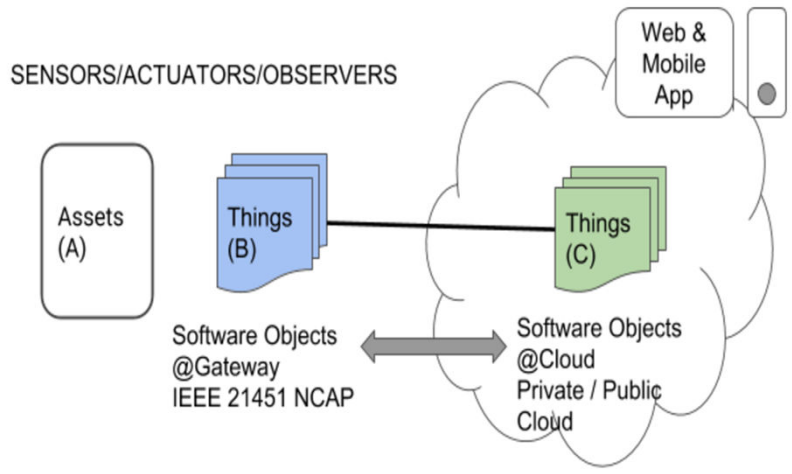
- A record of the work done
- Substantiate that the Project Goals/Requirements are met
- Establish Traceability – what is done; when; who

Project Document, also helps in

- 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 involves –
  - **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



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

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

ESW/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