Aircraft Architecture & Systems Integration
(Including CAD & Information Management)
Role description

This role is fundamental to the success of the design project, acting as a unifying member of the team, charged with implementing the design decisions in a physical manifestation. Preparing graphical representations of the evolving design and it's features, alongside co-ordination and control of data and information, this role must work closely with all team members to ensure integration of all sub-elements to meet the specification. Early identification of any challenges, conflicts, or inability to meet the specified criteria or performance will be key.

A vital task in a design project, and therefore a key responsibility for a design team member is the preparation and control of design documentation. They are responsible for:

- Selecting appropriate design and documentation tools;
- Choosing a strategy, e.g. 3D modelling, 2D drawing, a combination of both;
- Implementing a document control system
- Implementing a change control (and approval) system
- Specifying a format for drawings, a standard (e.g. BSI, ISO) and the system of units;
- Creating a system to control design variants

This is not a definitive list and does not imply an order of importance. All of these things are important.

A company would normally have systems in place, and a design team would work within them. As an independent design team, you, or specifically your elected CAD/Information Management person will have to create systems from scratch or borrow from past experience.

Two vital drawings are a General Arrangement and a Floor Plan. You may create many others but these two should be ready for the PDR in week 4. They may be refined later but should illustrate your intended path.

The AA&SI person has a key role within the team which requires close cooperation with other members of the team and she/he must ensure that all members are aware of the systems and procedures implemented.

With good systems in place, you should consider a Master Controlling Document. This is a main point of reference for other documents/systems where anyone can check that they have the current information.

Design outcomes at FEDR

- A General Arrangement drawing.
- Seating plans.
- Drawing of stretch variant.
- Control of diagrams required in other sections, e.g. Landing gear configurations, fuel distribution, electrical systems, airport support.
- Example of Change Control document (blank).
- Description of Document Control System.
- Description of Version Control System.
- A Master Controlling Document.
- A statement of standard, format and units of measure to be used.

You could also, time permitting, investigate and comment on commercially available Document Management systems.

CAD/Information Management
How to get going

1. Keep it simple. Make the most of what you know.
2. Make a list, and stick to it, e.g.
    a. Models will be created in "XXX" CAD system
    b. Drawings will be A4-A1 size
    c. The team title block will be .....
    d. Changes will be approved by at least 3 team members
    e. ....
3. Document control does not need to be complicated, i.e. sophisticated (expensive!) software systems. You could start by organising some folders and limiting access.
4. Let us know about your strategy so that we can see that you have it under control.
5. Very few systems are perfect, but having a system is far better than not.