Note: All info has been copy pasted from their respective sources, if we will include any of this info in the submission It needs to be paraphrased

**Raluca**: Hey, I can’t for the life of me upload this to the shared folder, do you have any idea why?

I think it’s good idea to have previous systems at hand. There doesn’t seem to be anything magnetic going on. But I think we should still have this if we find a problem with that idea and need to scrap it

**Anwesha:** Jatinder pointed out several issues with the magnet approach as well. I think that using magnets means having to consider shielding the electronic components as well so that’s a major drawback

**Raluca**:

Also, I doubt nobody thought of magnets so I think having problems with that idea might be likely (all that I’ve seen is mechanical)

I’m tired, so this is all I could do today

Has a lot of diagrams: Didn’t read all of it ISS Interface Mechanisms and their Heritage : <https://ntrs.nasa.gov/citations/20110010964>

Definition of Docking and Berthing Docking is when one incoming spacecraft rendezvous with another spacecraft and flies a controlled collision trajectory in such a manner so as to align and mesh the interface mechanisms. The spacecraft docking mechanisms typically enter what is called soft capture, followed by a load attenuation phase, and then the hard docked position which establishes an air-tight structural connection between spacecraft. Berthing, by contrast, is when an incoming spacecraft is grappled by a robotic arm and its interface mechanism is placed in close proximity of the stationary interface mechanism. Then typically there is a capture process, coarse alignment and fine alignment and then structural attachment. This will be discussed in more detail in later chapters.

Modified Rocketdyne Attachment System (RTAS)- <https://esmats.eu/amspapers/pastpapers/pdfs/2004/bruner.pdf>

The **Common** [**Berthing**](https://en.wikipedia.org/wiki/Common_Berthing_Mechanism#berthing) **Mechanism** (CBM)<https://en.wikipedia.org/wiki/Common_Berthing_Mechanism#cite_note-Note107-29>

CBM connects habitable elements in the [US Orbital Segment](https://en.wikipedia.org/wiki/US_Orbital_Segment) (USOS) of the [International Space Station](https://en.wikipedia.org/wiki/International_Space_Station) (ISS). The CBM has two distinct sides that, once mated, form a cylindrical [vestibule](https://en.wiktionary.org/wiki/vestibule) between modules. The vestibule is about 16 inches (0.4 m) long and 6 feet (1.8 m) across. At least one end of the vestibule is often limited in diameter by a smaller [bulkhead](https://en.wiktionary.org/wiki/bulkhead) penetration.

The elements are maneuvered to the berthing-ready position by a [Remote Manipulator System (RMS)](https://en.wikipedia.org/wiki/Common_Berthing_Mechanism#rms). Latches and bolts on the Active CBM (ACBM) side pull [fittings](https://en.wiktionary.org/wiki/fitting#Nouns) and [floating nuts](https://en.wikipedia.org/wiki/Nut_plate) on the Passive CBM (PCBM) side to align and join the two.

#### *Mate*

The two halves of the CBM are nominally joined in three operations:

* + **Capture** acquires and aligns the in-coming PCBM with respect to the geometry of the ACBM
  + **Nut Acquisition** threads each Powered Bolt into its respective nut
  + **Boltup** fully preloads the joint between the two halves

New System proposal: FIMER: <https://www.isi.edu/robots/prl/everist2004a-system-for-in-space-assembly.pdf>

The robots use fan propulsion lo dock with components and assemble them together to make 2D structures This system is designed to implement three key technologies for spa@? sell- assembly: 1) intelligent components with universal connectors, 2) a set of sell-reconfigurable robots that fetch and assemble components, and 3) a distributed method for controlling the robotic-assembly process. An overview of the system's design and experimental results is presented.

**Anwesha:** Useful pdf on some suggested methods from NASA along with current robotic methods - <https://exoplanets.nasa.gov/internal_resources/1018/> --> See page 24 onwards

Neat summary of modularisation approach in context of James Webb Space Telescope - <https://exoplanets.nasa.gov/internal_resources/928/>

Got a bunch of diagrams on robotic assembly : <https://exoplanets.nasa.gov/internal_resources/914/>