



Mobile Servicing System (MSS)

Space Station Remote Manipulator System (SSRMS) and Special Purpose Dexterous Manipulator (SPDM/Dextre)

Mobile Base System (MBS), Canadian Space Agency (CSA)/MacDonald, Dettwiler and Associates, Ltd.

The Mobile Servicing System (MSS) plays a key role in the construction of the ISS and general Station operations. It allows astronauts and cosmonauts to work from inside the Station, thus reducing the number of spacewalks. The MSS Operations Complex in Longueuil, Quebec, is the ground base for the system.

The MSS has three parts:



The Space Station Remote Manipulator System (SSRMS), known as Canadarm 2, is similar to the Canadarm used on the Space Shuttle, but Canadarm 2 is larger, incorporates many advanced features, and includes the ability to self-relocate.



The Mobile Base System (MBS) provides a movable work platform and storage facility for astronauts during spacewalks. With four grapple fixtures, it can serve as a base for both the Canadarm 2 and the Special Purpose Dexterous Manipulator (SPDM) simultaneously. Since it is mounted on the U.S.-provided Mobile Transporter (MT), the MBS can move key elements to their required worksites by moving along a track system mounted on the ISS truss.

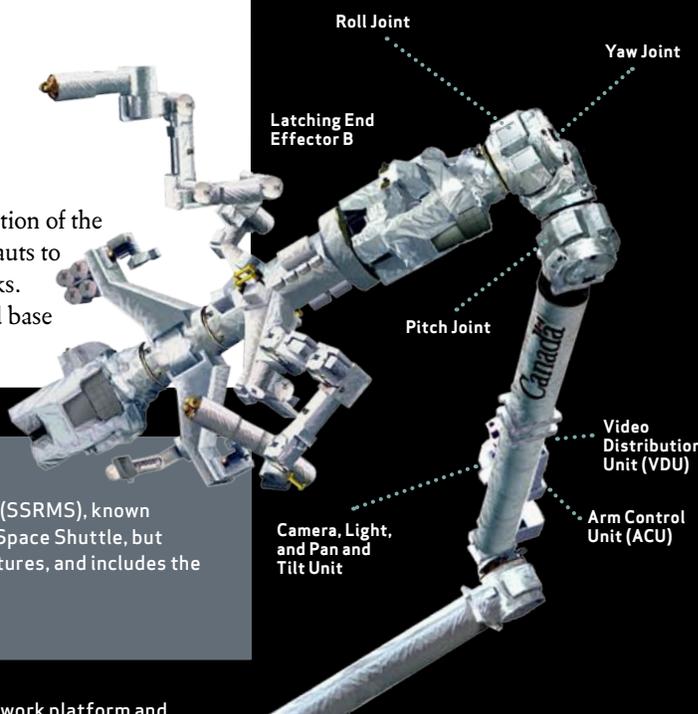
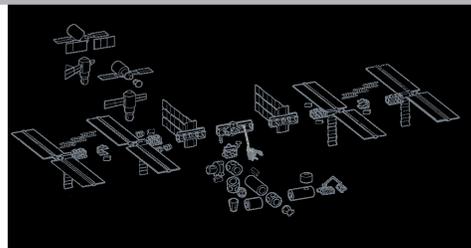


The Special Purpose Dexterous Manipulator (SPDM) has a dual-arm design that can remove and replace smaller components on the Station's exterior, where precise handling is required. It will be equipped with lights, video equipment, and a tool platform, as well as four tool holders.



SSRMS during testing.

Canadian Remote Power Controller Module (CRPCM)



	SSRMS	MBS	SPDM
Length/height	17.6 m (57 ft)		3.5 m (11.4 ft)
Maximum diameter	.36 m (1.2 ft)		.88 m (2.9 ft)
Dimensions		5.7 x 4.5 x 2.9 m (18.5 x 14.6 x 9.4 ft)	
Mass	1,800 kg (3,969 lb)	1,450 kg (3,196 lb)	1,662 kg (3,664 lb)
Degrees of freedom	7		

