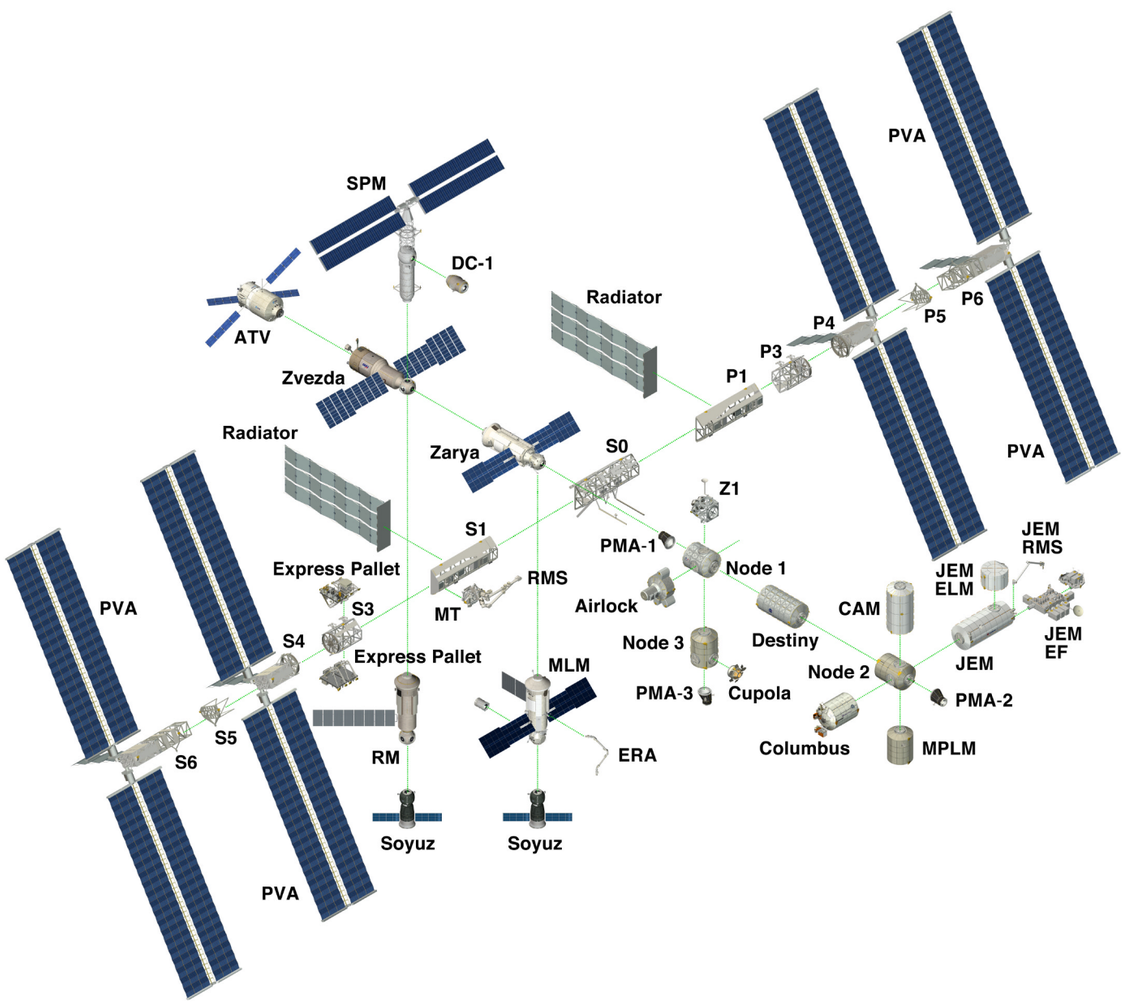
Specification

Available launch vehicles:	
	European Ariane-5 launcher
	Japanese H-IIA launcher
	Russian Proton launcher
	Russian Soyuz launcher
	United States Space Shuttle
Available transport vehicles for crew and/or supplies:	
	European Automated Transfer Vehicle (ATV): servicing and logistics vehicle
	Japanese HII Transfer vehicle (HTV): servicing and logistics vehicle
	Russian Soyuz vehicle: manned space craft that accommodates 3 cosmonauts
	New rescue vehicle
	Russian Progress vehicle: servicing and logistics vehicle
	US Space Shuttle: manned spacecraft for up to 7 astronauts and equipped with the Multi Purpose Logistics Module (MPLM), the Un-pressurized Logistics Carrier (ULC) or other space station structural parts in its cargo bay.
Partners:	
	Canada, Canadian Space Agency (CSA)
	Europe, European Space Agency (ESA) representing 11 of the 17 member states
	Japan, Japan Aerospace Exploration Agency (JAXA)
	Russia, Roscosmos
	USA, National Aeronautics and Space Administration (NASA)



Illustrations: ESA/D. Ducros

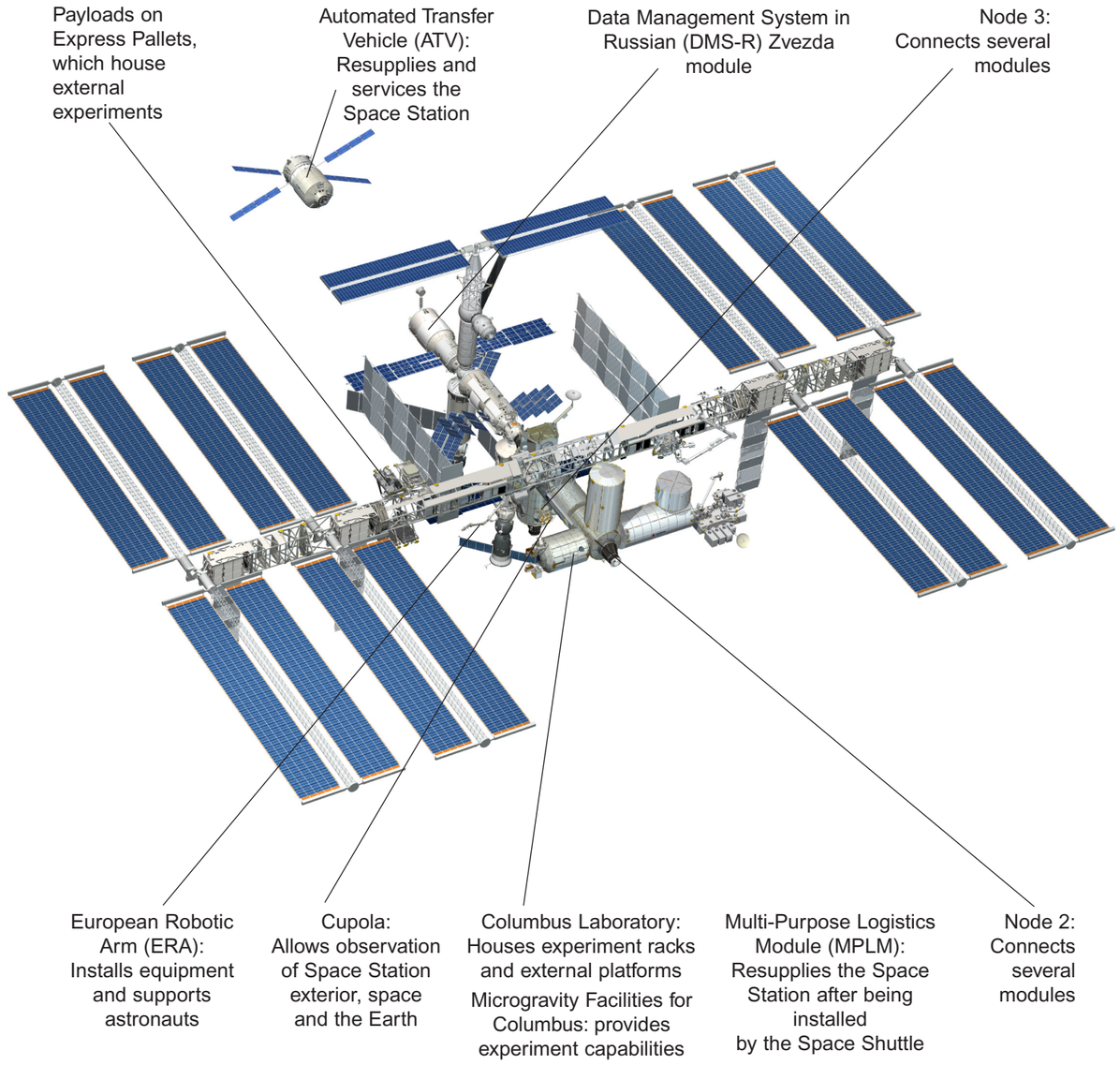
www.spaceflight.esa.int/users

International Space Station (ISS)

Versatile permanently inhabited research institute in Low Earth Orbit

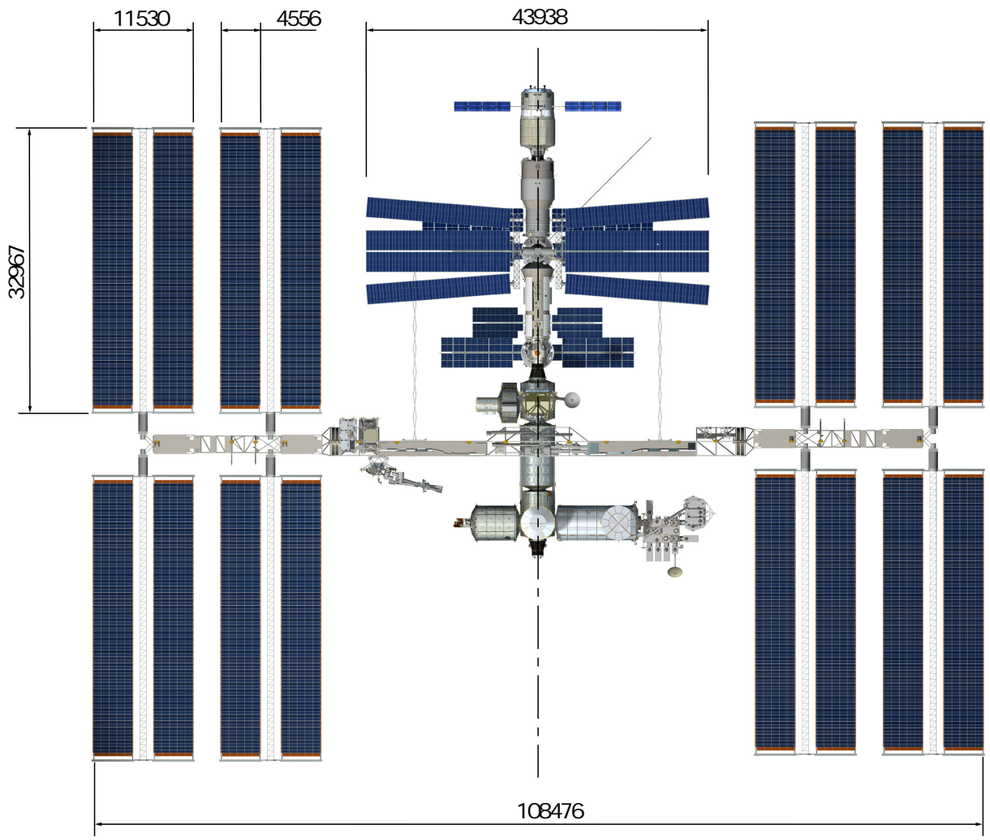
The International Space Station is a versatile research institute and a large observation platform in outer space for scientific research and applications. It also serves as a test centre to facilitate introduction of new technologies. This permanently human occupied outpost in outer space should also serve as a stepping stone for further space exploration.

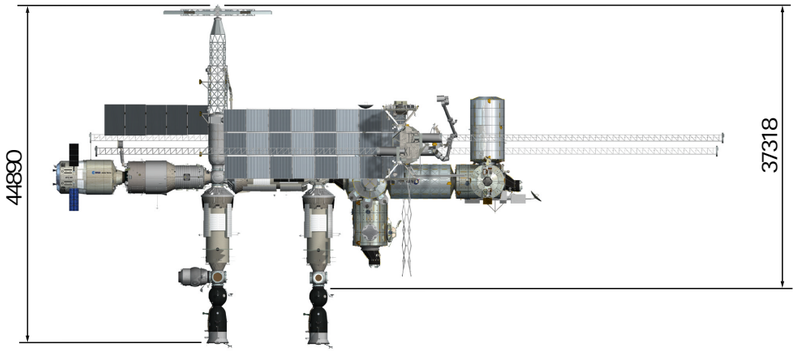
The European participation in the International Space Station

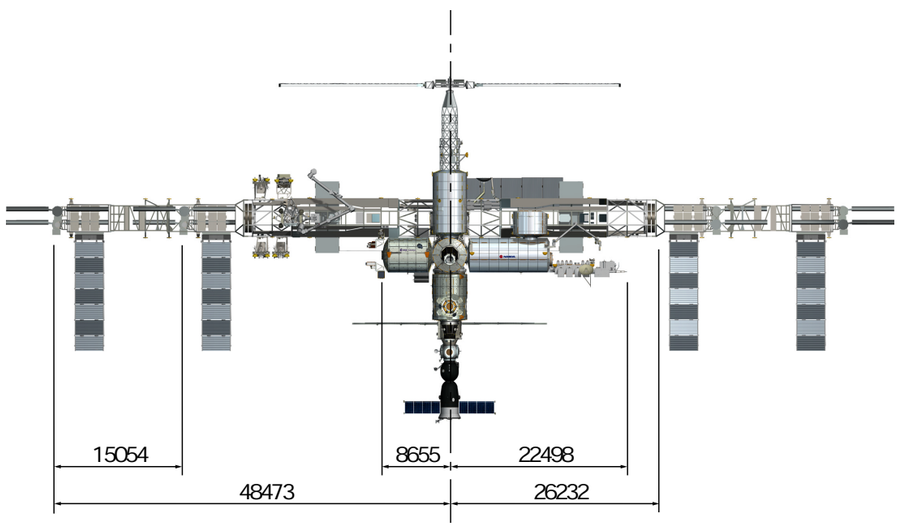


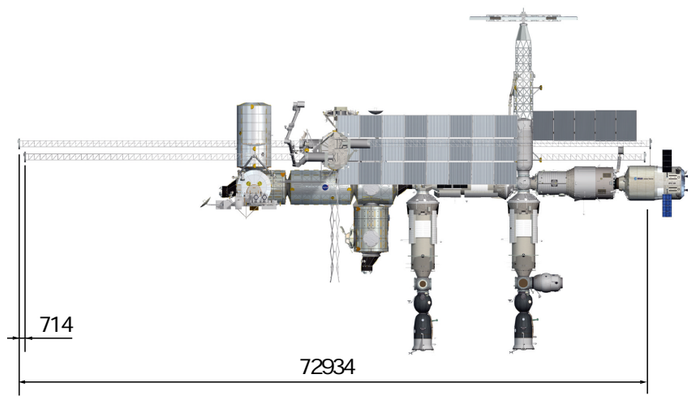
esa	PROJECT : **International Space Station**		
TITLE :	**Final Configuration**	DOCUMENT N°: UIC-ESA-FSH-001	REV. 1.2

ERASMUS User Centre and Communication Office - Directorate of Human Spaceflight, Microgravity and Exploration Programmes









Specifications

Dimensions and mass:	
Width:	108 m
Length:	74 m (~88 m incl. ATV or Progress)
Height:	45 m
Pressurized volume:	1.200 m^3
Total mass at completion:	~ 450.000 kg
Propulsion	
	Monomethyl hydrazine fuel and Nitrogen tetroxide oxidizer for orbit raise and attitude control when the Control Moment Gyros or Gyrodynes are not used or to unload them. To prevent wearout of the Stations rocket motors, attitude control and re-boost functions are also performed by visiting spacecraft such as the European Automated Transfer Vehicle, the Soyuz, Progress and Space Shuttle.
Communications infrastructure	
TDRS:	50 Mbps Ku-band link (up-link and down link with the same bit-rate) 192 kbps S-band down-link 72 kbps S-band up-link
Environmental control	
Permanent crew:	6 (after completion)
Internal pressure:	958 - 1013 hPa
Internal temperature:	18°C - 27°C
	Temperature and humidity control, Carbon dioxide removal, Trace contaminants control, Atmosphere components monitoring, Oxygen production, Waste water processing to potable water, Pre-treated urine to urine distillate processing Crew urine and fecal collection and processing
Electrical power	
Maximum power output:	110 kW (Provided by large solar arrays. Power is converted to 120 V DC by the station)
Launch configuration	
	Launched in components on different launch vehicles, provided by 4 of the 5 participating partners and assembled in orbit.
1st launch:	20 November 1998
Assembly complete:	2010
On orbit configuration	
	Final assembled configuration as shown in drawings
Orbital altitude:	370 - 460 km
Orbital inclination:	51.6°
Orbital velocity:	7.7 - 7.6 km/s (~ 27.500 km/h)
Attitude:	Torque equilibrium attitude control and X-vector in velocity direction

esa

PROJECT: **International Space Station**

SCALE : 1: 750

DIMENSIONS : mm

TITLE: **Final Configuration**

DOCUMENT N° : UIC-ESA-FSH-001

REV. 1.2