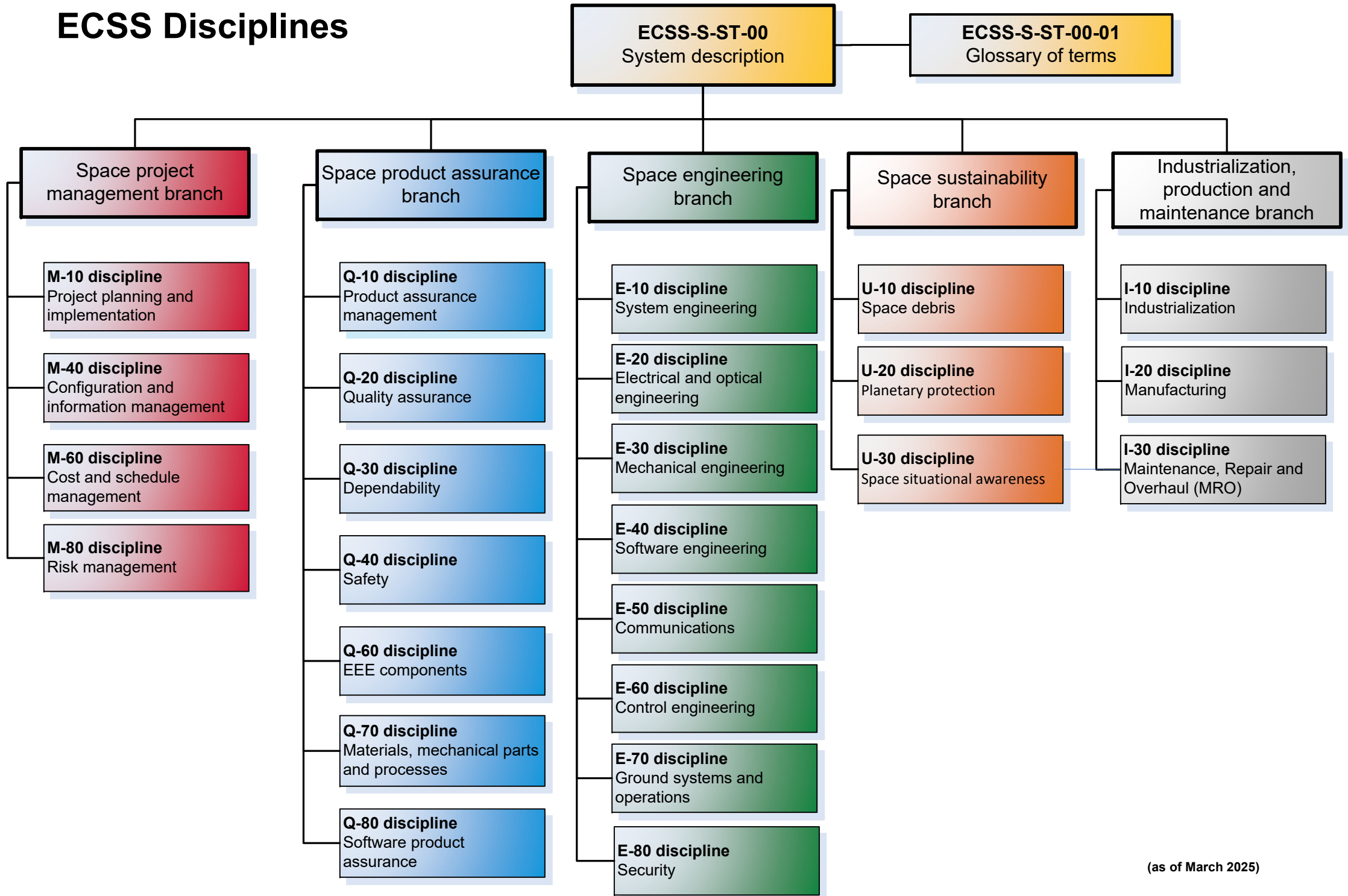
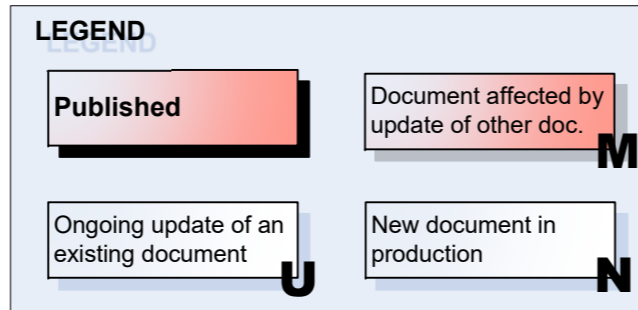
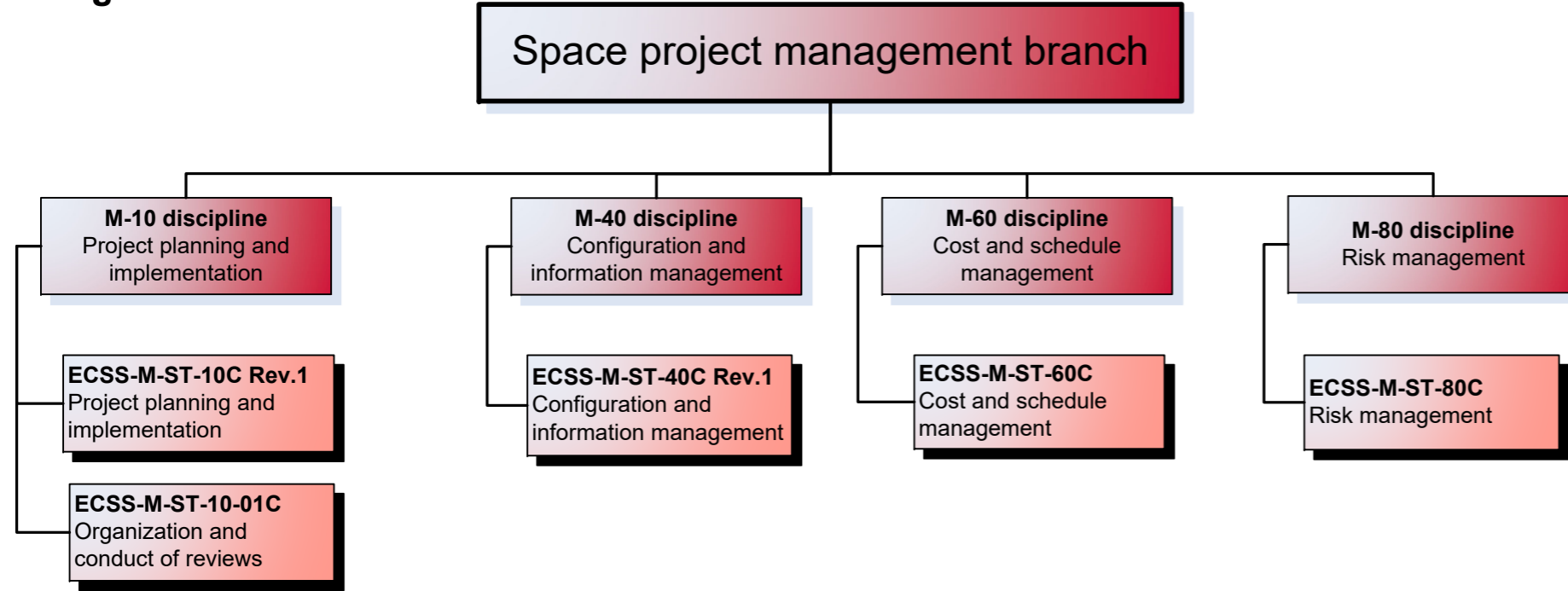


# ECSS Disciplines



# ECSS Standards

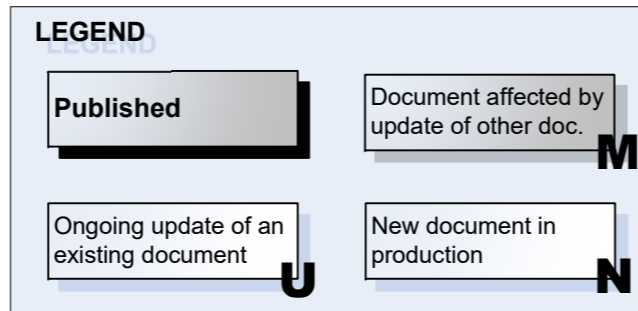
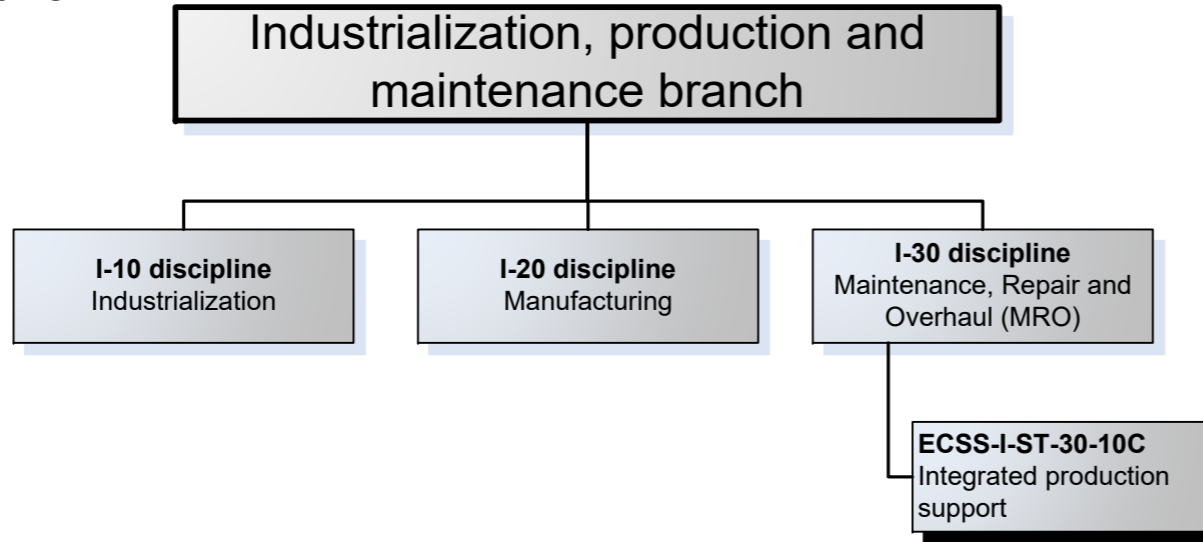
## Management branch



(as of March 2025)

# ECSS Standards

## Industrialization branch

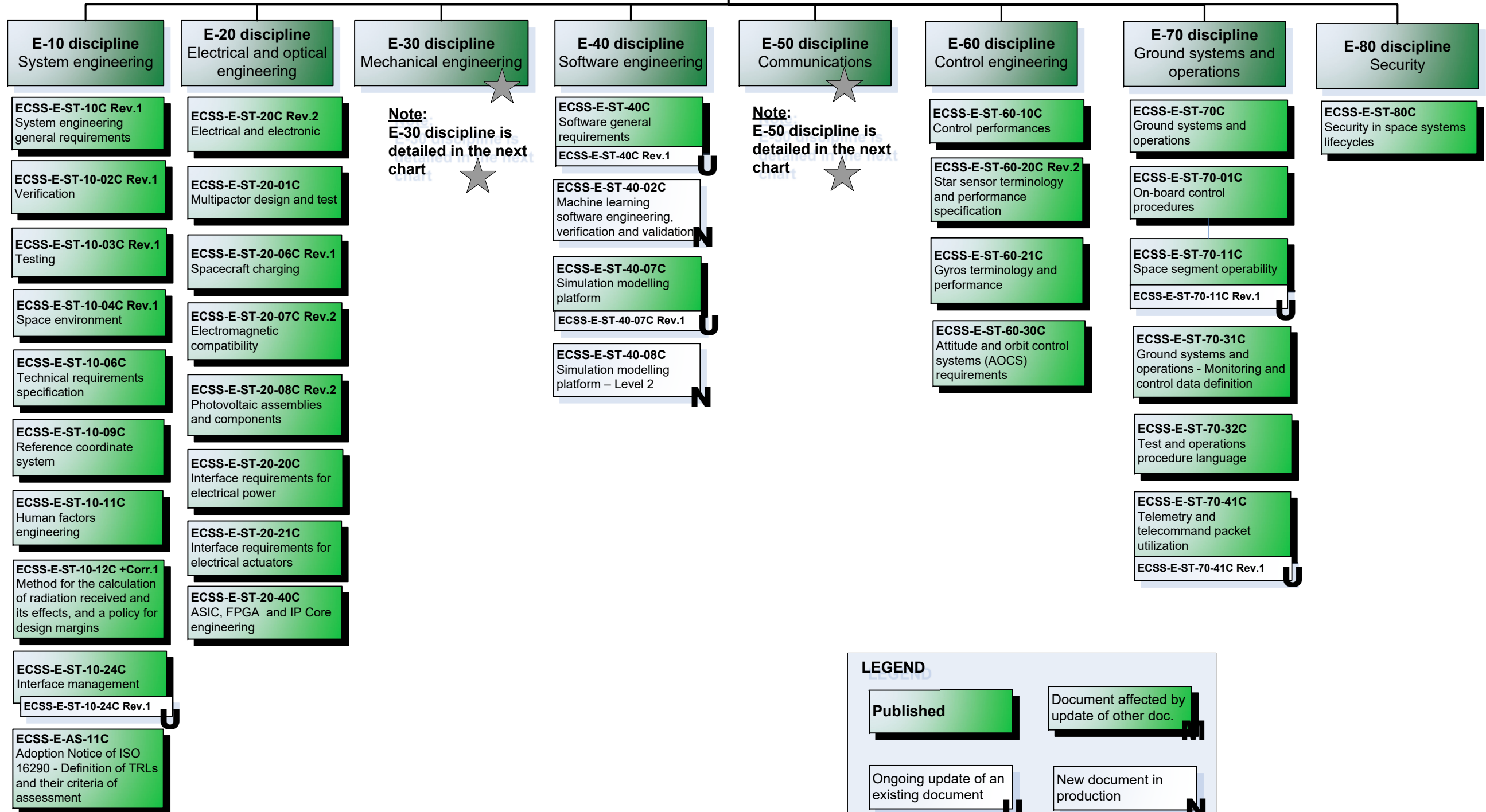


(as of October 2024)

# ECSS Standards

## Engineering branch

### Space engineering branch



**LEGEND**

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# E-30 discipline

## Mechanical engineering

**ECSS-E-ST-31C**  
Thermal control general requirements

**ECSS-E-ST-32C Rev.1**  
Structural general requirements

**ECSS-E-ST-33-01C Rev.2**  
Mechanisms

**ECSS-E-ST-34C**  
Environmental control and life support

**ECSS-E-ST-35C Rev.1**  
Propulsion general requirements

**ECSS-E-ST-31-02C Rev.1**  
Two-phase heat transport equipment

**ECSS-E-ST-32-01C Rev.2**  
Fracture control

**ECSS-E-ST-33-11C Rev.1**  
Explosive subsystems and devices

**ECSS-E-ST-35-01C**  
Liquid and electric propulsion for spacecraft

**ECSS-E-ST-31-04C**  
Exchange of thermal analysis data

**ECSS-E-ST-32-02C Rev.1**  
Structural design and verification of pressurized hardware

**ECSS-E-ST-35-02C**  
Solid propulsion for spacecraft and launchers

**ECSS-E-ST-32-02C Rev.2**

**ECSS-E-ST-32-03C**  
Structural finite element models

**ECSS-E-ST-35-03C**  
Liquid propulsion for launchers

**ECSS-E-ST-32-08C Rev.1**  
Materials

**ECSS-E-ST-35-06C Rev.2**  
Cleanliness requirements for spacecraft propulsion hardware

**ECSS-E-ST-32-10C Rev.2**  
Structural factors of safety for spaceflight hardware

**ECSS-E-ST-35-10C**  
Compatibility testing for liquid propulsion systems

**ECSS-E-ST-32-11C**  
Modal survey assessment

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# E-50 discipline Communications

**ECSS-E-ST-50C Rev.2**  
Communications

**ECSS-E-ST-50-11C**  
SpaceFibre – Very high-speed serial link

**ECSS-E-ST-50-51C**  
SpaceWire protocol identification

**ECSS-E-ST-50-02C**  
Ranging and Doppler tracking

**ECSS-E-ST-50-12C Rev.1**  
SpaceWire - Links, nodes, routers and networks

**ECSS-E-ST-50-52C**  
SpaceWire - Remote memory access protocol

**ECSS-E-ST-50-05C Rev.2**  
Radio frequency and modulation

**ECSS-E-ST-50-13C**  
Interface and communication protocol for Mil std 1553B

**ECSS-E-ST-50-53C**  
SpaceWire - CCSDS packet transfer protocol

**ECSS-E-AS-50-21C Rev.2**  
Adoption Notice of CCSDS 131.0-B-5, TM Synchronization and Channel Coding

**ECSS-E-ST-50-14C**  
Spacecraft discrete interfaces

**ECSS-E-AS-50-22C Rev.1**  
Adoption Notice of CCSDS 132.0-B-3, TM Space Data Link Protocol

**ECSS-E-ST-50-15C**  
CAN bus extension protocol

**ECSS-E-AS-50-23C Rev.1**  
Adoption Notice of CCSDS 732.0-B-4, AOS Space Data Link Protocol

**ECSS-E-ST-50-15C Rev.1**

**ECSS-E-AS-50-24C Rev.1**  
Adoption Notice of CCSDS 231.0-B-4, TC Synchronization and Channel Coding

**ECSS-E-ST-50-16**  
Time-triggered ethernet (TTE)

**ECSS-E-AS-50-25C Rev.1**  
Adoption Notice of CCSDS 232.0-B-4, TC Space Data Link Protocol

**ECSS-E-AS-50-26C**  
Adoption Notice of CCSDS 232.1-B-2, Communications Operation Procedure-1

## LEGEND

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**NOTE: All planned Updates are on hold until the completion of the ECSS NextGen project**

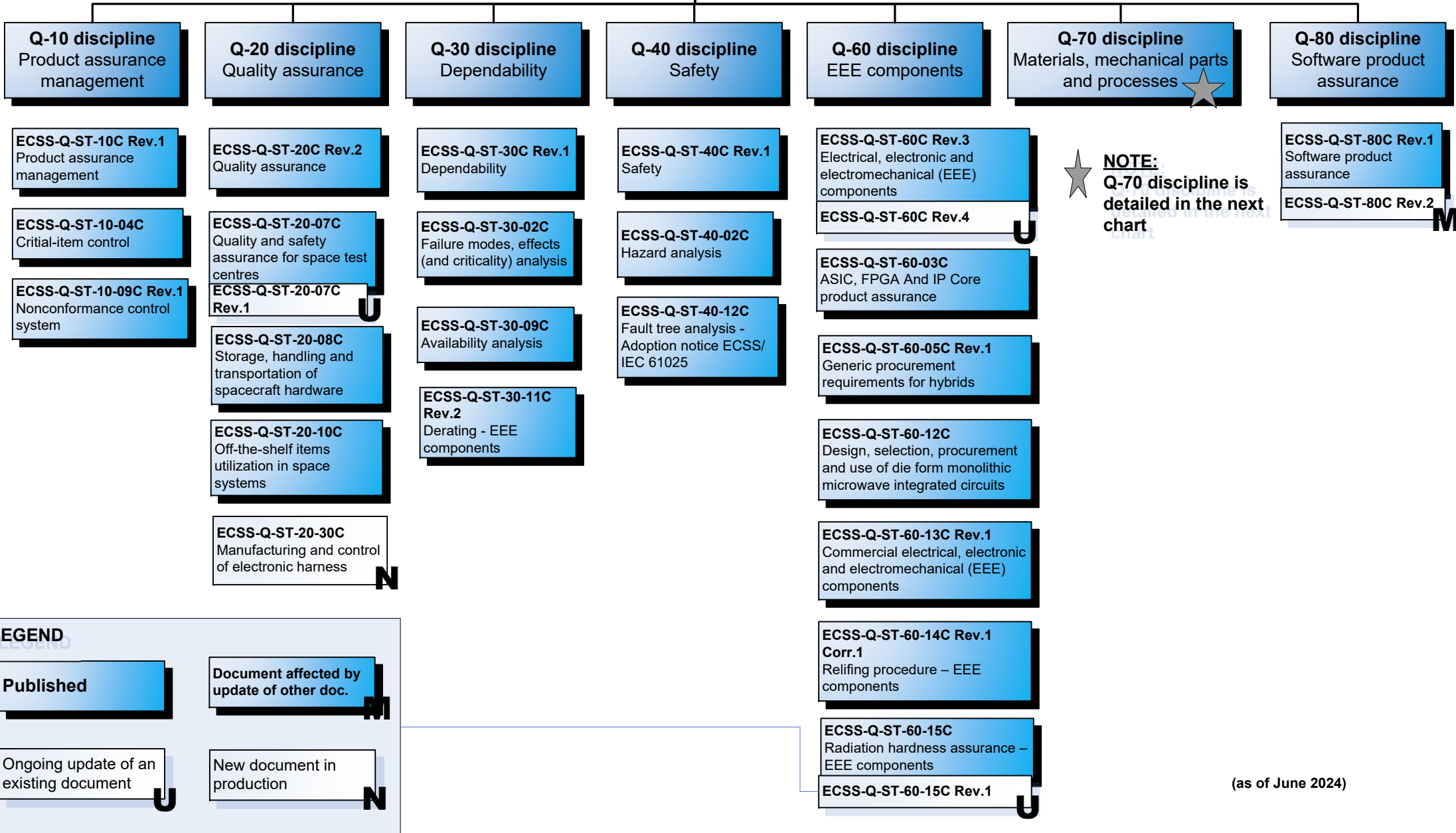
(as of December 2024)



# ECSS Standards

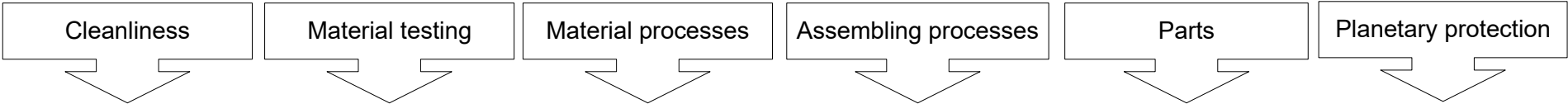
## Product assurance branch

### Space product assurance branch



(as of June 2024)

**Q-70 discipline**  
Materials, mechanical parts and processes



**ECSS-Q-ST-70C Rev.2**  
Materials, mechanical parts and processes

**ECSS-Q-ST-70-71C Rev.1**  
Materials, processes and their data selection

**ECSS-Q-ST-70-01C**  
Cleanliness and contamination control  
ECSS-Q-ST-70-01C Rev.1

**ECSS-Q-ST-70-05C Rev.1**  
Detection of organic contamination surfaces by IR spectroscopy  
ECSS-Q-ST-70-05C Rev.2

**ECSS-Q-ST-70-50C**  
Particle contamination monitoring for spacecraft systems and cleanrooms

**ECSS-Q-ST-70-02C**  
Thermal vacuum outgassing test for the screening of space materials

**ECSS-Q-ST-70-04C**  
Thermal testing for the evaluation of space materials, processes, mechanical parts and assemblies

**ECSS-Q-ST-70-06C**  
Particle and UV radiation testing for space materials

**ECSS-Q-ST-70-15C**  
Non-destructive inspection

**ECSS-Q-ST-70-20C**  
Determination of the susceptibility of silver-plated copper wire and cable to "red-plague" corrosion

**ECSS-Q-ST-70-21C**  
Flammability testing for the screening of space materials

**ECSS-Q-ST-70-29C**  
Determination of offgassing products from materials and assembled articles to be used in a manned space vehicle crew compartment

**ECSS-Q-ST-70-36C**  
Material selection for controlling stress-corrosion cracking  
ECSS-Q-ST-70-36C Rev.1

**ECSS-Q-ST-70-37C**  
Determination of the susceptibility of metals to stress-corrosion cracking  
ECSS-Q-ST-70-37C Rev.1

**ECSS-Q-ST-70-45C**  
Mechanical testing of metallic materials

**ECSS-Q-ST-70-03C**  
Black-anodizing of metals with inorganic dyes

**ECSS-Q-ST-70-09C**  
Measurements of thermo-optical properties of thermal control materials

**ECSS-Q-ST-70-13C Rev.1**  
Measurements of the peel and pull-off strength of coatings and finishes using pressure-sensitive tapes

**ECSS-Q-ST-70-17C**  
Durability testing of coatings

**ECSS-Q-ST-70-22C**  
Control of limited shelf-life materials

**ECSS-Q-ST-70-31C Rev.1**  
Application of paints and coatings on space hardware

**ECSS-Q-ST-70-14C**  
Corrosion

**ECSS-Q-ST-70-26C Rev.1 +Corr.1**  
Crimping of high-reliability electrical connections

**ECSS-Q-ST-70-28C**  
Repair and modification of printed circuit board assemblies for space use

**ECSS-Q-ST-70-30C**  
Wire wrapping of high-reliability electrical connections

**ECSS-Q-ST-70-39C**  
Welding of metallic materials for flight hardware

**ECSS-Q-ST-70-40C**  
Processing and quality assurance requirements for brazing of flight hardware

**ECSS-Q-ST-70-61C**  
High reliability assembly for surface mount and through hole connections

**ECSS-Q-ST-70-80C**  
Processing and quality assurance requirements for metallic powder bed fusion technologies for space applications

**ECSS-Q-ST-70-12C**  
Design rules for printed circuit boards  
ECSS-Q-ST-70-12C Rev.1

**ECSS-Q-ST-70-18C**  
Preparation, assembly and mounting of RF coaxial cables

**ECSS-Q-ST-70-46C Rev.1**  
Requirements for manufacturing and procurement of threaded fasteners

**ECSS-Q-ST-70-60C**  
Qualification and procurement of printed circuit boards  
ECSS-Q-ST-70-60C Rev.1

ECSS-Q-ST-70-60C Rev.1

**ECSS-Q-ST-70-60C**  
Qualification and procurement of printed circuit boards  
ECSS-Q-ST-70-60C Rev.1

**ECSS-Q-ST-70-60C**  
Qualification and procurement of printed circuit boards  
ECSS-Q-ST-70-60C Rev.1

**ECSS-Q-ST-70-61C**  
High reliability assembly for surface mount and through hole connections

**ECSS-Q-ST-70-61C**  
High reliability assembly for surface mount and through hole connections

**ECSS-Q-ST-70-53C**  
Materials and hardware compatibility tests for sterilization processes

**ECSS-Q-ST-70-54C**  
Ultra cleaning of flight hardware

**ECSS-Q-ST-70-55C**  
Microbiological examination of flight hardware and cleanrooms

**ECSS-Q-ST-70-56C**  
Vapour phase bioburden reduction for flight hardware

**ECSS-Q-ST-70-57C**  
Dry heat bioburden reduction for flight hardware

**ECSS-Q-ST-70-58C**  
Bioburden control in cleanrooms

**LEGEND**

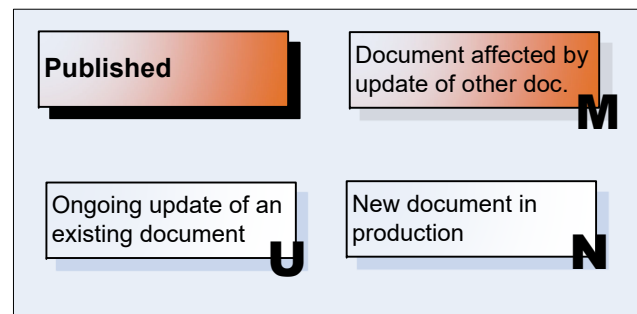
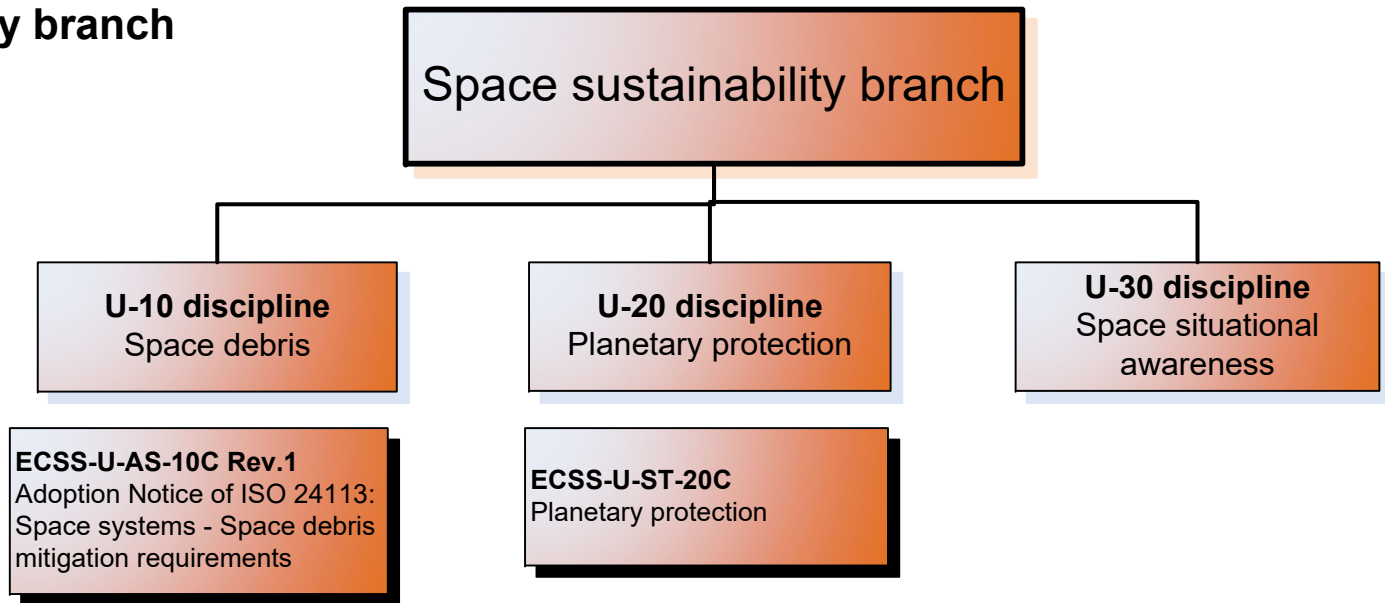
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**NOTES:**  
**ECSS-Q-ST-70-60C** = merge of Q-ST-70-10C Rev.1 and Q-ST-70-11C  
**ECSS-Q-ST-70-61** = merge of Q-ST-70-07C, Q-ST-70-08C and Q-ST-70-38C Rev.1



# ECSS Standards

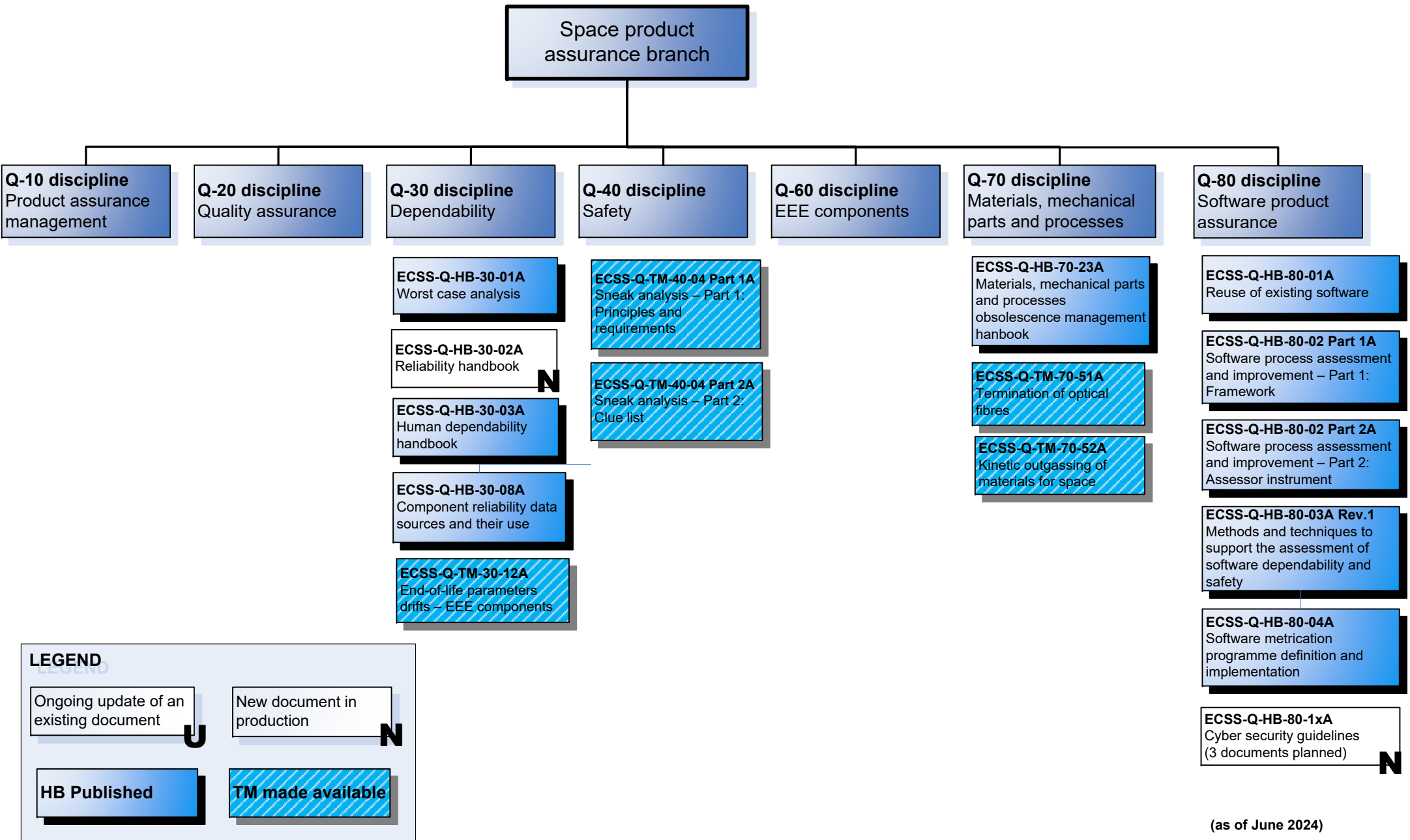
## Sustainability branch



(as of June 2024)

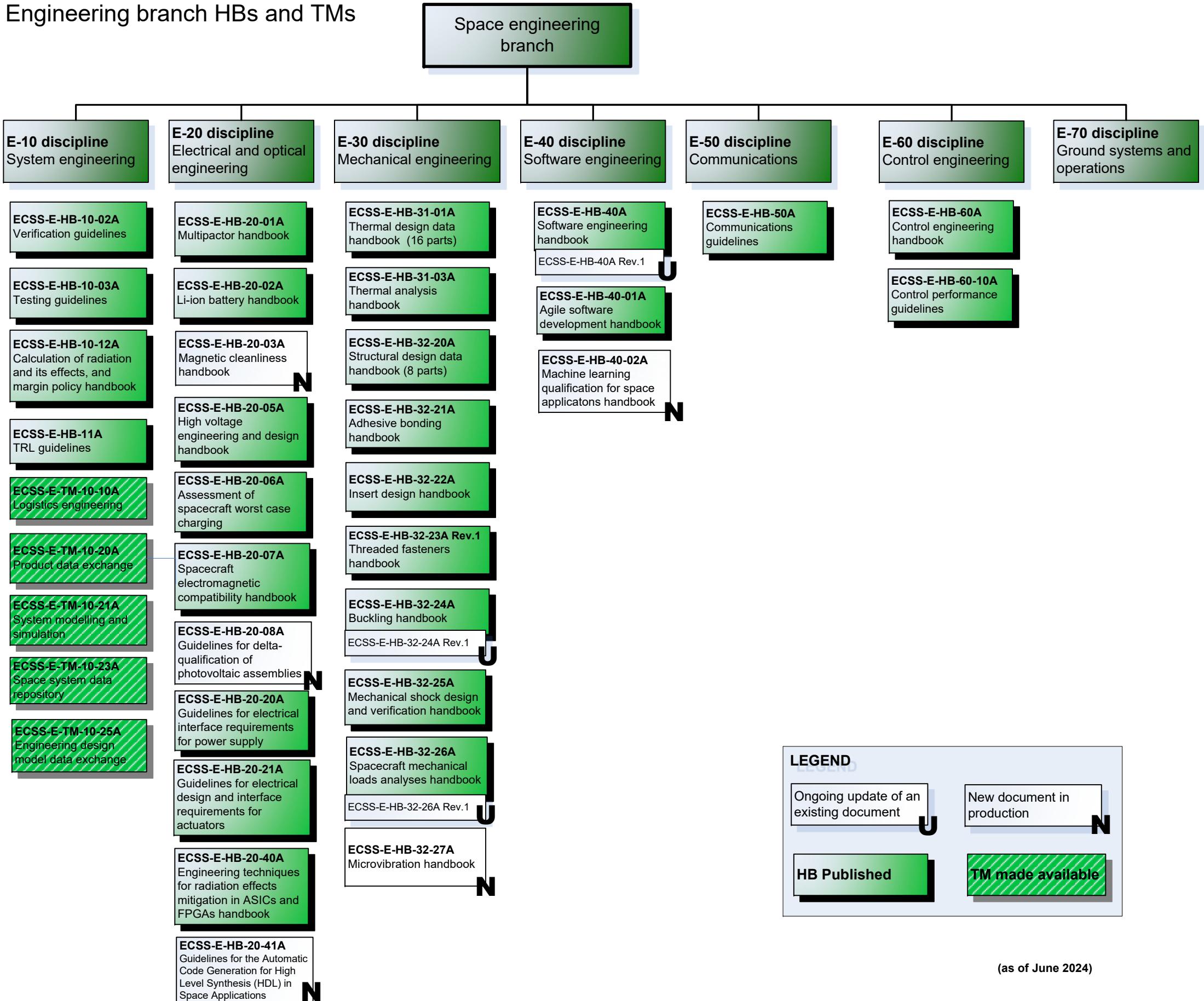
# ECSS Handbooks and Technical memoranda

## PA branch HBs and TMs

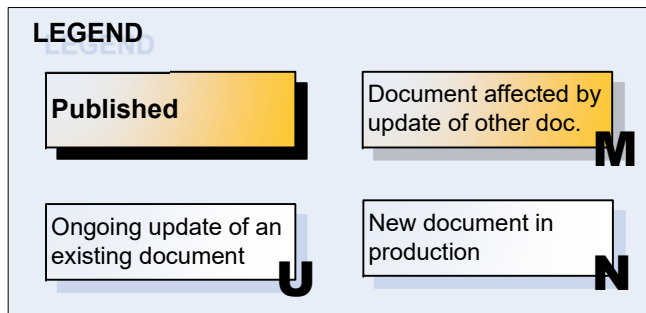
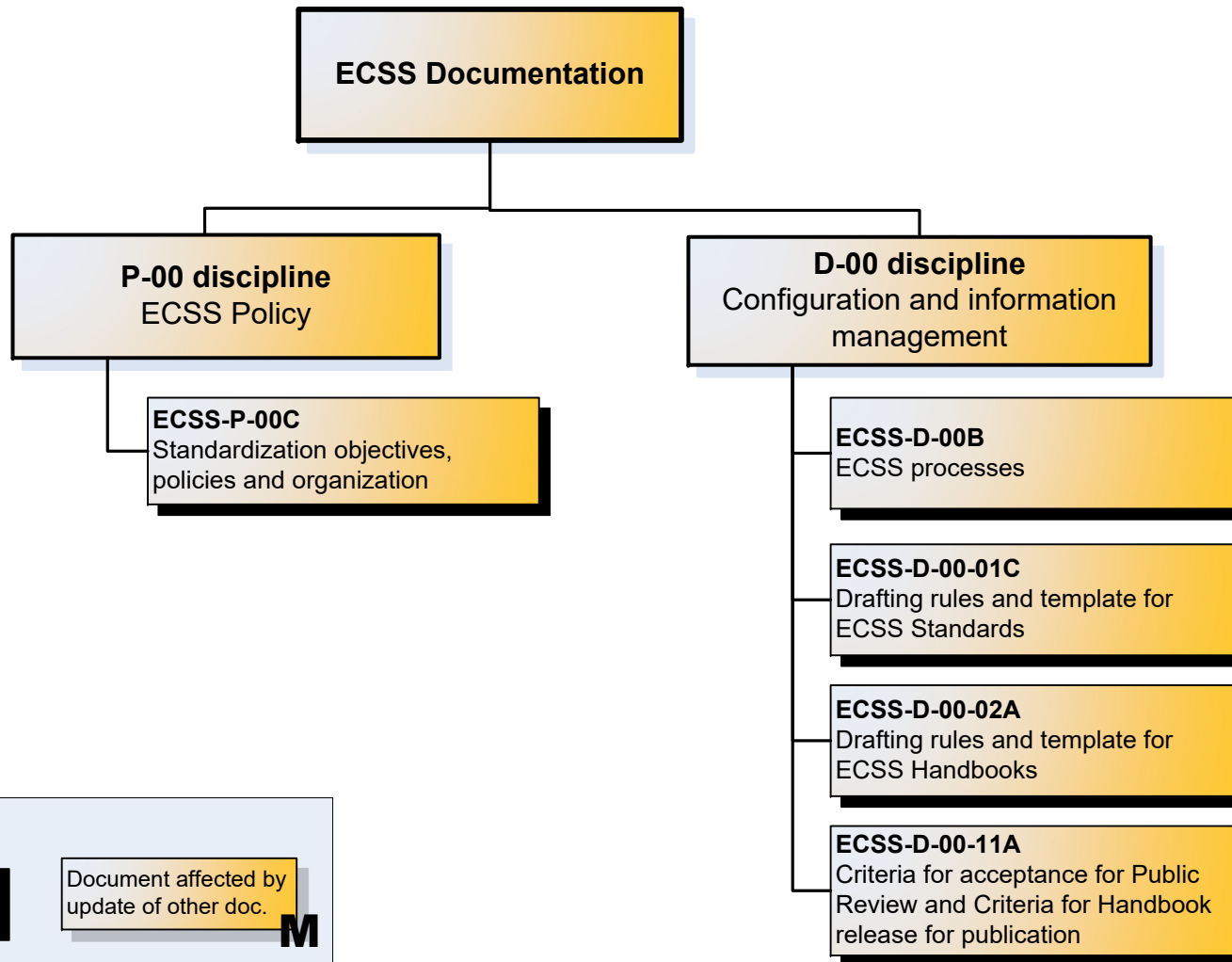


# ECSS Handbooks and Technical memoranda

## Engineering branch HBs and TMs



# ECSS Policy (P) and Configuration and information management (D) documents



(as of June 2024)