

The S700 I/O modules are connected on the right side of the I/O bus, i.e. they are simply plugged to the TU terminal blocks that were previously added to the CPU modules. Up to ten I/O modules can be connected to the I/O bus of the CPU module.

The configuration in the Freelance Engineering hardware structure should correspond to the actual controller configuration (local DIN rail). Make sure that there are no blank TU terminal blocks between the individual I/O modules. I/O modules connected on the right side of a gap (i.e. of a blank terminal block) are not controlled by the CPU module.

## Controller redundancy

Two controllers of identical configuration - hereinafter referred to as redundant controllers - are used for redundant operation. While the active controller has the “Primary“ status, the “Secondary“ status is assigned to the other controller. During normal operation, the primary is the active controller and the secondary the passive one (hot standby).

For synchronization purposes, a point-to-point Ethernet connection (100 MBit/s) must be established between the controllers. This connection is also referred to as redundancy link.

A redundant configuration may be composed of two controllers of basic or medium level configuration. Make sure to use only the CI 930F, CI 910F or CI 773F communication interface modules for the medium configuration level as only these module types are suitable for redundant operation.



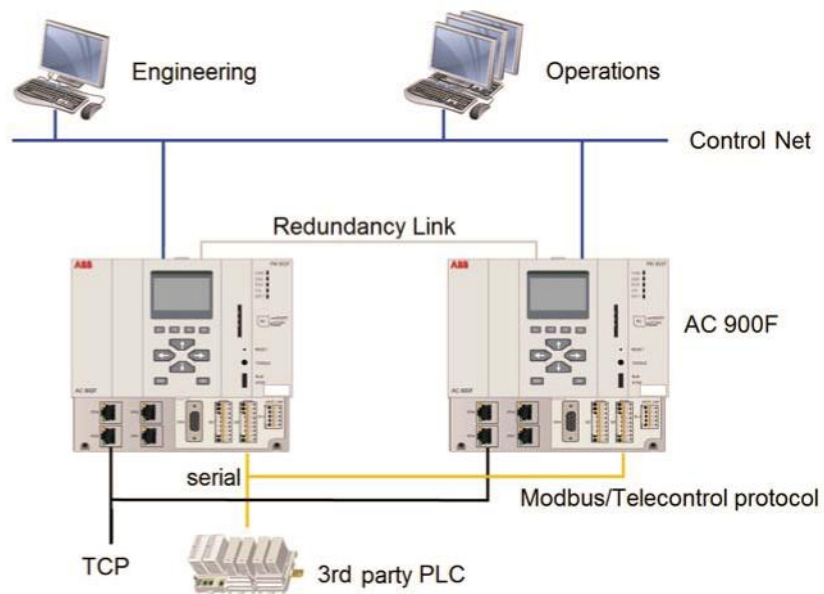
The S700 Direct I/O and the CM 772F communication module are not supported with redundant controller arrangement.

If the primary controller (Primary) fails, the secondary controller is activated via a designated communication connection (redundancy link).

The cyclical adjustment ensures smooth change over from the primary to the secondary controller, i.e.

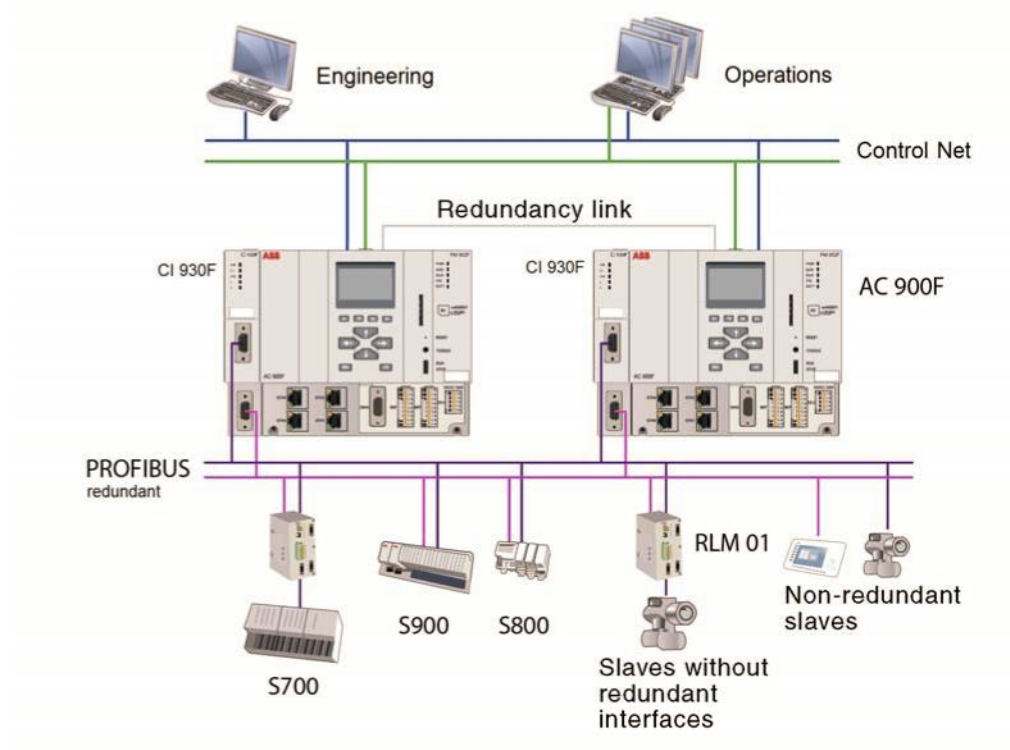
- the outputs of fieldbus-connected I/O components are maintained.
- the internal status (component data, variables) is maintained.
- the configuration and operating data of the primary and secondary controllers are automatically adapted.

AC 900F in redundant configuration using the on-board interfaces for Modbus and telecontrol protocols.



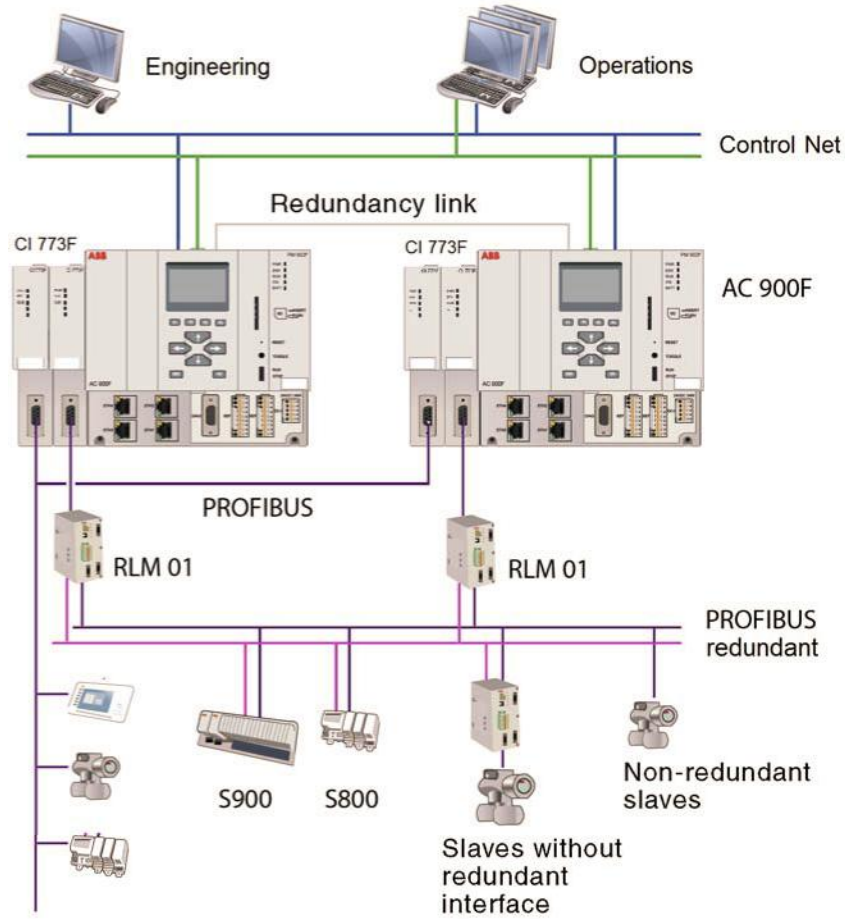
Controller Redundancy us.png

Redundant AC 900F with PROFIBUS line redundancy in the field at a redundant Control Net. The figure below shows a configuration with PROFIBUS line redundancy using a CI 930F module.



Line\_redundancy\_us.png

An existing PROFIBUS line in a single configuration with a CI 773F module can be enhanced to become a PROFIBUS with redundant lines by using additional RLM 01 modules, as shown in the following figure:



Line Redundancy CI773F us.png