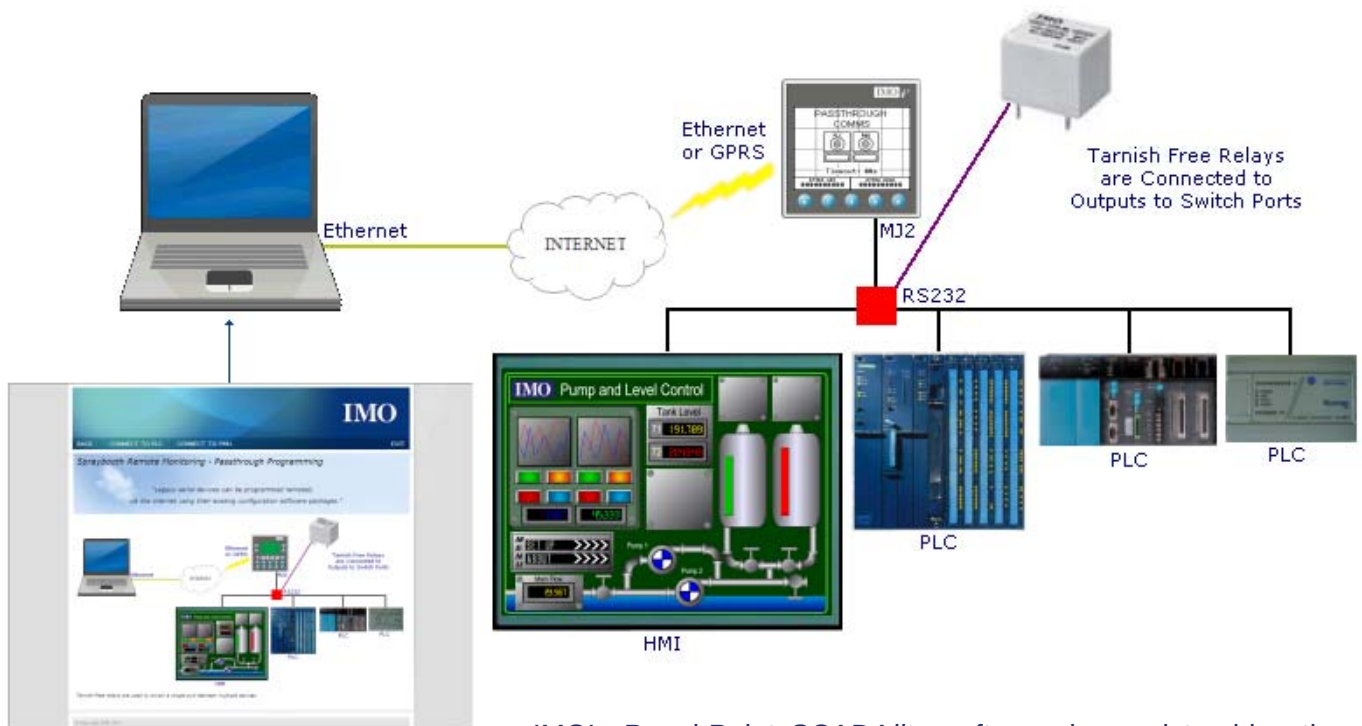


Remote Pass-Through Communications

Remote monitoring, control and programming of devices can reduce service visits required and allow first class customer service to be provided to end customers. It minimizes downtime, maximises productivity and reduces servicing costs by allowing the possibility of fault diagnosis without visiting site.

However, legacy devices often only provide serial communications, as a limitation of the hardware and the associated programming software. Imagine being able to program these devices from your office miles from their location on the factory floor! In fact the devices could be anywhere in the world.

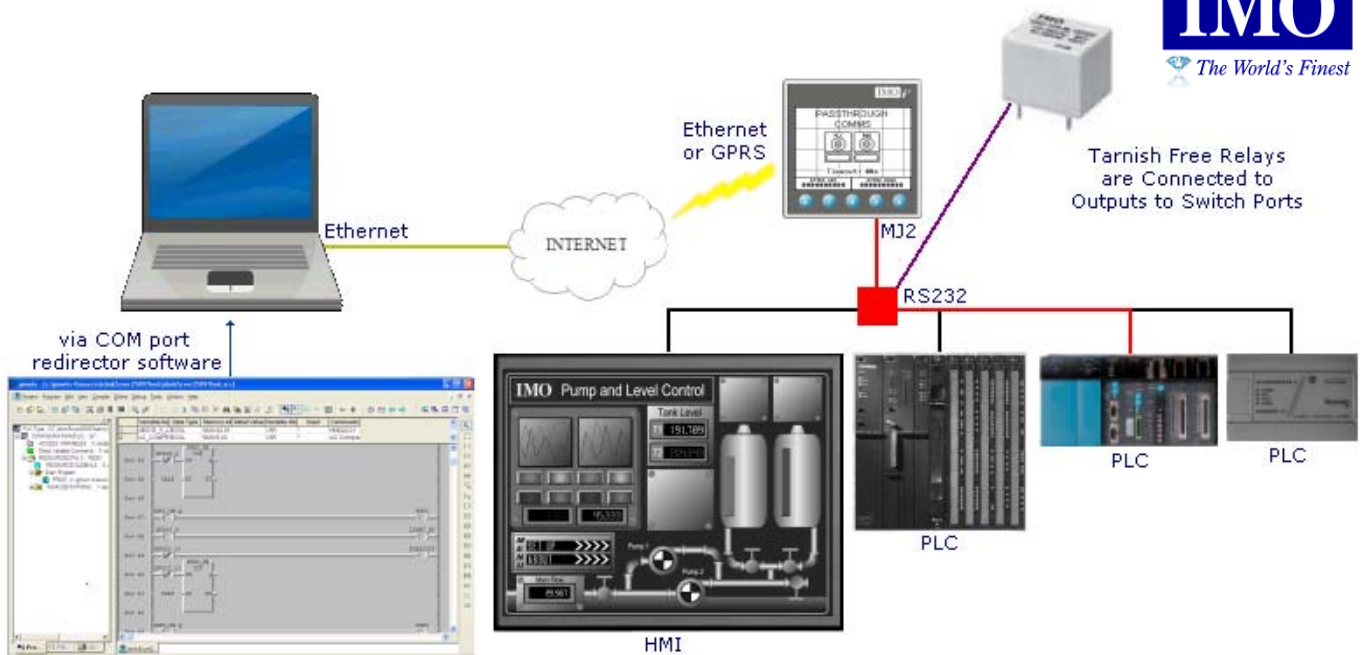
IMO's powerful *i*³ controller can make that possible. Remote access to a control system is available in two ways, using Ethernet and the Internet or by GPRS modem. Communications with the remote *i*³ can be 'passed-through' to one or more legacy devices via the *i*³'s serial port.



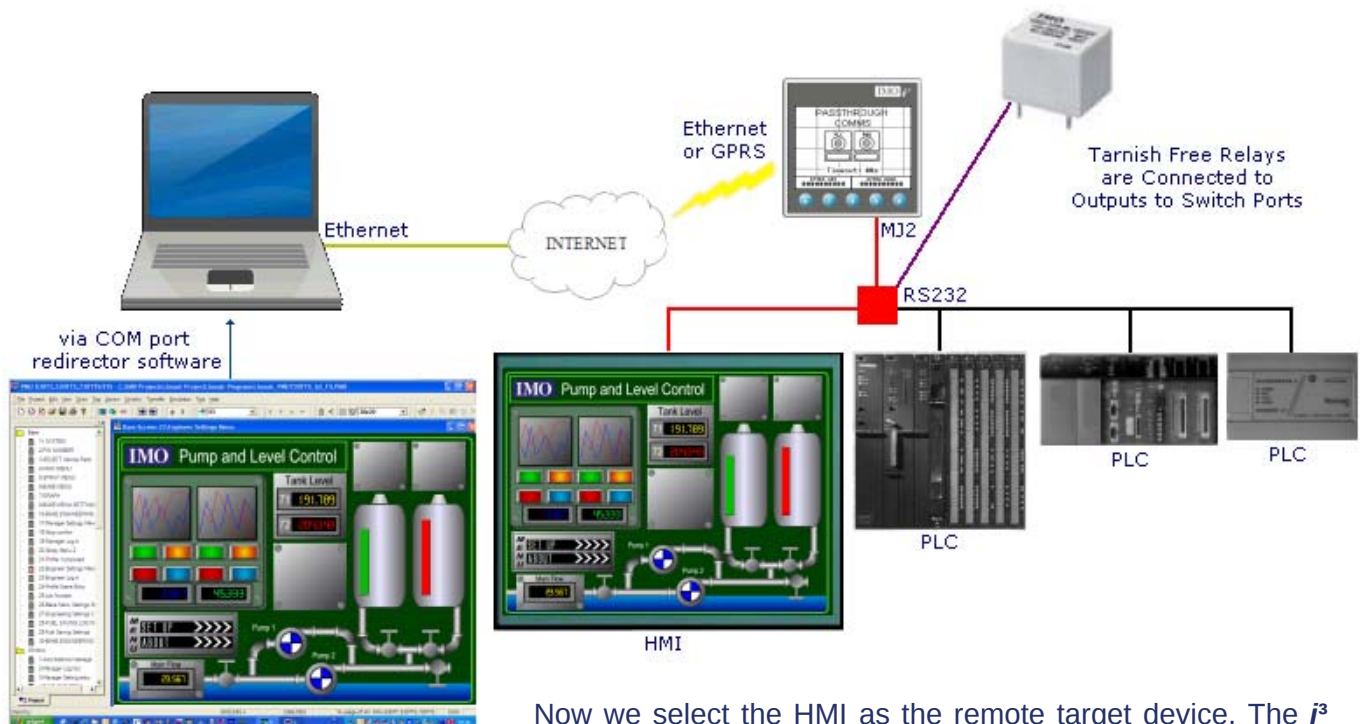
IMO's Panel-Point SCADA/ite software is used to drive the remote connection, and initially select which remote device to connect to. The *i*³ then switches its communications port to the correct channel via a transistor output.

Up to 8 devices can be connected to the *i*³ in this way. The transistor outputs and relays create a kind of 'multiplexor' which switches the communications lines. Only one communications port is used on the *i*³ for all of the devices.

Supports either RS232, RS485 or RS422 communications.



Here one of the PLCs has been selected as the remote target device. The *i³* switches over to the PLC by turning on one of its outputs, activating a relay to switch the communication lines. At the PC end the correct PLC programming software is run via com port redirector software, which converts serial to Ethernet.



Now we select the HMI as the remote target device. The *i³* switches over to the HMI by turning on one of its outputs, activating a relay to switch the communication lines. At the PC end the HMI configuration software is run via com port redirector software, which converts serial to Ethernet.

Please note that great care should be taken when designing a system with remote connection capability. Under no circumstances should the remote connection be able to control safety critical aspects of the system. Safe guards should be built into the internal logic of the control systems to prevent remote operation causing danger to operators. The remote operator should never assume things are safe at the other end, and should confirm with an engineer on site that the system is in a secure state before remote diagnosis is attempted.

