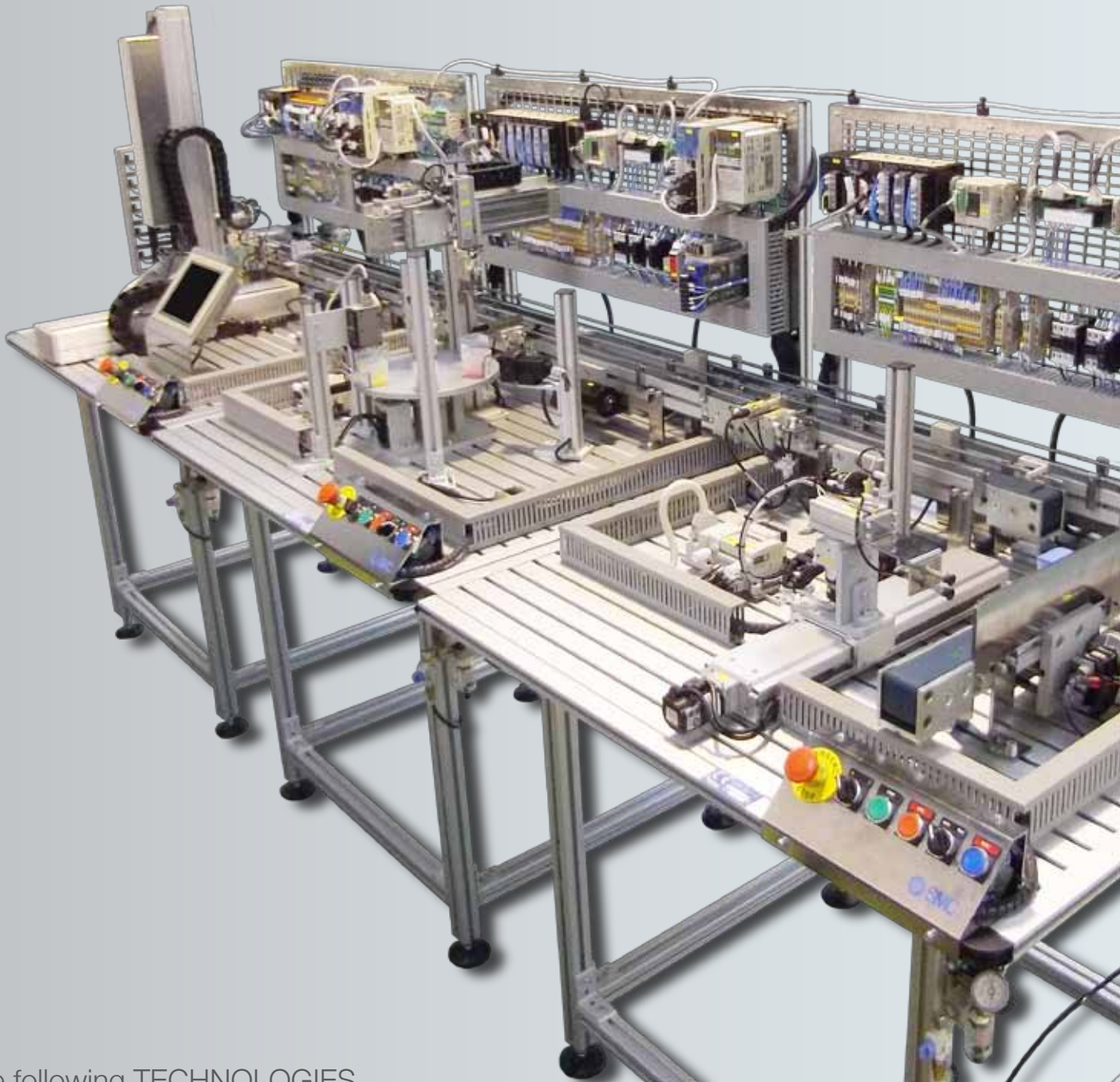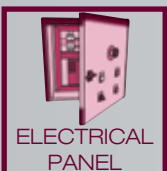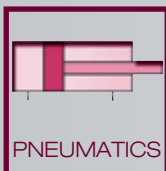# ITS-200

Innovative Training System

Develop your skills with the most cutting-edge industrial technology in sensors and servo-drives

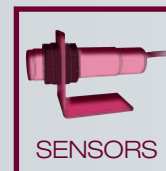In the following TECHNOLOGIES...

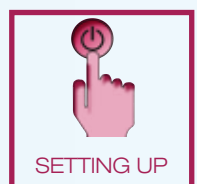| ELECTRICAL PANEL	PNEUMATICS	VACUUM	ELECTRIC MOTORS	SENSORS	IDENTIFICATION SYSTEMS	ARTIFICIAL VISION	PROGRAMM. CONTROLLERS

Develop the SKILLS...

Drives
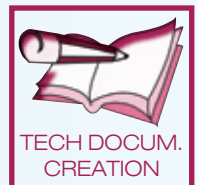- DC
- AC with Inverter Control
- Servomotors

Sensors
- Artificial vision
- Laser
- Colour
- Fiber Optic

ANALYSIS

TROUBLESHOOTING

DESIGNING

TECH DOCUM. CREATION

TECH DOCUM. UNDERSTANDING

OPERATION

PROGRAMMING

SETTING UP

RFID

Continuous operating mode, without having to add raw materials

MANIPULATORS

INDUSTRIAL COMMUNIC.

MOTION CONTROL

SCADA / HMI

AUTOMATED SYSTEMS
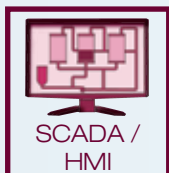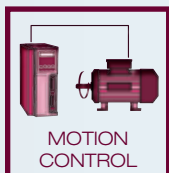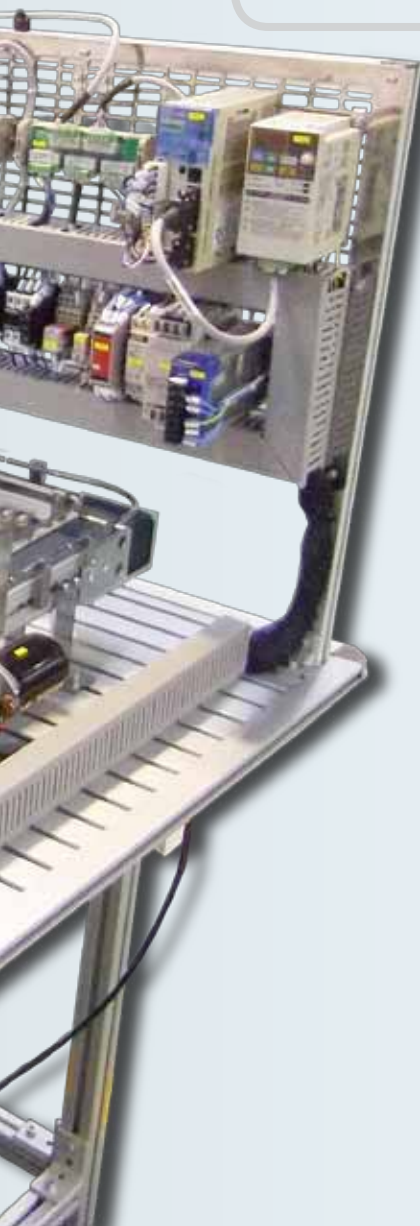
ITS - 200

ITS-200 - Innovative Training System

The ITS-200 system provides professional training in industrial automation, more specifically in the field of state-of-the-art servo drive and sensor systems.

The product is taken from storage, transported from one station to another and returned to store indefinitely. The system can therefore operate continuously without needing to add more raw material. This allows it to be controlled from a distance for remote management and remote maintenance work.

All of the components used in the system are industrial. Each station includes its own PLC. The stations can be easily extracted from the system so that work can be carried out autonomously. Quick release connections are included in the electrical cables and pneumatic pipes.

ITS-200 is composed of three stations each of which carries out one part of the process.

• ITS 201: Automatic warehouse

The station extracts products from the warehouse and transfers them to the conveyor belt or vice versa.
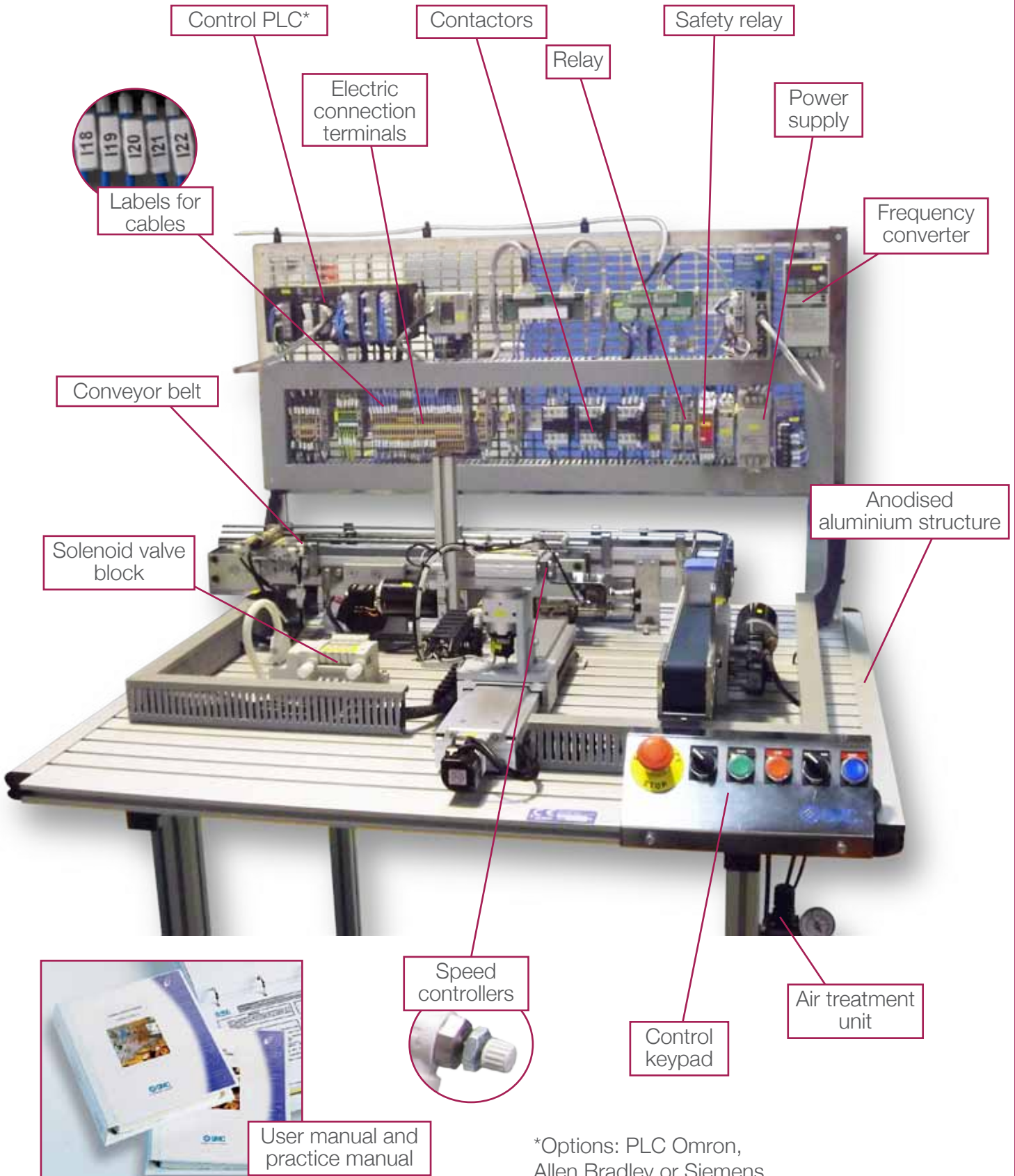
• ITS 202: Inspection

The second station inspects the different workpieces. The results of this inspection are transferred to the RFID memory inside each product.

• ITS 203: Classification and delivering

The third and last station classifies the different products and dispatches them depending on the data stored in the RFID memory.

● Common element in all stations

Control PLC*

Contactors

Safety relay

Relay

Power supply

Electric connection terminals

Frequency converter

Labels for cables

Conveyor belt

Anodised aluminium structure

Solenoid valve block

Speed controllers

Control keypad

Air treatment unit

User manual and practice manual

*Options: PLC Omron, Allen Bradley or Siemens.

ITS - 200

● ITS-201 - Automatic warehouse

The first station represents an automatic warehouse where the containers are stored and picked up. Material movement is selected by a HMI (Human-Machine Interface). Using the HMI terminal, it is also possible to view the material classified in the ITS-203 station and change the speed of any return belt, via the network connection.

The part is a moulded-plastic container which includes a number code and an identifying colour. Inside is an RFID tag and coloured nylon blocks. A blue lid may also be fitted.


HMI screen

• SAI3110	ITS-201 with Allen Bradley PLC
• SAI3120	ITS-201 with Siemens PLC
• SAI3130	ITS-201 with Omron PLC

● ITS 202: Inspection

The second station inspects the contents of the different products: if the jar has a lid or not, the material colour, the product height and the label's numerical code.

The results of this inspection are transferred to the RFID memory inside each product being.
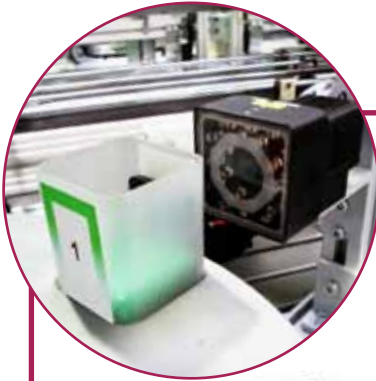
• SAI3210   ITS-202 with Allen Bradley PLC
• SAI3220   ITS-202 with Siemens PLC
• SAI3230   ITS-202 with Omron PLC

ITS 203: Classification and delivering

The third station represents an automated delivery system where the containers are classified into 5 different positions or they are rejected.

The station classifies the different products and dispatches them according to the data stored in the RF memory.

• SAI3310	ITS-203 with Allen Bradley PLC
• SAI3320	ITS-203 with Siemens PLC
• SAI3330	ITS-203 with Omron PLC

● ITS-200 - Options

ITS -200 has a series of optional extras.

• Programming tools

The programming tools comprise the appropriate programming software, the industrial system communication programming software and cables for the chosen PLC.

See Programming Tools chapter

● ITS-200 - Configuration

Getting the right ITS-200 specification is as easy as:

• Steps to follow

1.- Choose the PLC.

2.- Select the required stations.

3.- Add any optional extras.

• Considerations

- Any station can operate independently and be purchased separately.

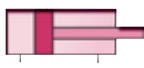- In order to work with the full system, you will need the ITS-202 station.
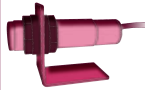
● ITS-200 - Technical features

ITS-201
940x1060x1645mm

Modules	Sensors (type & quantity)	Input / Output
Loading/Unloading Cylinder Positioning shafts Conveyor belts	Auto switch, Reed type (x7) Vacuum pressure switch (x1) Photocells (x21)	Digital 42/22
Other devices (quantity)	Actuators (type & quantity)	
Vacuum pad (x2) - Vacuum ejector (x1) Servo-controller (x2)	Pneumatic linear (x5) Servo-controlled linear actuators (x2) Pneumatic rotary actuator (x1) DC motor (x1) AC motor (x1)	

ITS-202
940x1060x1520mm

Modules	Sensors (type & quantity)	Input / Output
Index plate Two-shaft handling device Material checking positions Conveyor belts	Auto switch, Reed type (x5) Solid state auto switch (x2) Fiber optic photocell (x1) Chromatic phtocell (x1) Laser (x1) Artificial vision camera (x1) Photocell (x1) RF reading/writing aerial (x1)	Digital 35/33 Analog 1/0
Other devices (quantity)	Actuators (type & quantity)	
Servo-controller (x1) Vision processor unit (x1) RF identification system (x1)	Pneumatic linear (x6) Servo-controlled turning actuator (x1) Pneumatic gripper (x1) DC motor (x1) AC motor (x1)	

ITS-203
940x1060x1520mm

Modules	Sensors (type & quantity)	Input / Output
Rejection of material Electro-pneumatic handling device Conveyor belts	Auto switch, Reed type (x5) Vacuum pressure switch (x1) RF reading/writing aerial (x1) Photocell (x1)	Digital 16/16
Other devices (quantity)	Actuators (type & quantity)	
Vacuum pad (x2) - Vacuum ejector (x1) Servo-controller (x1) RF identification system (x1)	Pneumatic linear (x4) Servo-controlled linear actuator (x1) DC motor (x2) Pneumatic rotary actuator (x1) AC motor (x1)	

ITS-200 - With this system you could...

ITS-200 comes up with different practical activities targeting skills in the technologies featuring in the table (below).

TECHNOLOGIES

SKILLS	ELECTRICAL PANEL	PNEUMATICS	VACUUM	ELECTRIC MOTORS	SENSORS	IDENTIFICATION SYSTEMS	ARTIFICIAL VISION	PROGRAMM. CONTROLLERS
ANALYSIS	■	▨	▨	▨	■	■	■	■
TROUBLESHOOT.								▨
DESIGNING	■	▨	▨	▨	■	■	■	■
TECH DOCUM. CREATION	■	▨	▨	▨	■	■	■	■
TECH DOCUM. UNDERSTANDING	■	▨	▨	▨	■	■	■	■
OPERATION	■	■		▨	■	■	■	■
PROGRAMMING						■	■	■
SETTING UP								

■ This shows how the ITS-200 is suitable to develop skills in the specific technology.

▨ This shows that ITS-200 can help develop skills in the specific technology even though there are other more appropriate products in the range.

@ eLEARNING-200

Find out more about the theory behind the technologies developed in ITS-200 with our eLEARNING-200 courses.

MANIPULATORS	INDUSTRIAL COMMUNIC.	MOTION CONTROL	SCADA / HMI	AUTOMATED SYSTEMS
■	■	■	■	■
	■	■		■
■	■	■	■	■
■	■	■	■	■
■	■	■	■	■
■		■	■	■
	■	■	■	■
				■

RELATED eLEARNING-200 COURSES

Introduction to industrial automation (SMC-100)

Principles of pneumatics (SMC-101)

Introduction to electricity (SMC-102)

DC electricity (SMC-103)

Solid state (SMC-105)

Introduction to wiring (SMC-106)

Introduction to electric motors (SMC-107)

Sensors technology (SMC-108)

Programmable controllers (SMC-109)

Motion control (SMC-112)

Industrial communications (SMC-114)

Supervision and control systems (SMC-115)

See eLEARNING-200 chapter for more information