UDC 371.6:371.694

TRAINING LABORATORY COMPLEX  
OF ARRANGED HIERARCHICAL AUTOMATIC  
OPERATING SYSTEM (AOS) OF PRINTING PROCESSES

R. V. Каzmirovych, O. R. Каzmirovych

*Ukrainian Academy of Printing,  
19, Pidholosko St., Lviv, 79020, Ukraine  
kazmol@yandex.ru*

**Research methodology.** During its elaboration the training laboratory complex (TLC) has been using a conditional arrange of industrial networks on the three hierarchical levels: the industrial network of the level of sensors and executive mechanisms; the industrial network of the level of controllers; the information network.

**Results.** The TLC for students to get experience in design and work with SCADA system for physical models of real printing objects control built on the basis of expanding of the ASM printing process of programmable logic controllers (PLC) made by SIEMENS and national MIK-51 small-channel controllers has been introduced in the educational process.

**Novelty.** The training technology for students to obtain the knowledge faster through the exercises with creation control software for digital management system of printing industrial process during skillful identification and considering the management algorithm while using usual infrastructure input/output process devices and exercises from outright accumulation data and visualization data has been developed.

**The practical significance.** Using the elaborated TLC students learn essential principles of programming of the SCADA/НМІ printing manufacturing system with programming languages of controllers according to the MEK 61131 standard, such as LD, FBD and IL and get working experience with a touch screen. The TLC gives a possibility to verify on practice various management algorithms and object identifications, to compare the results of theoretical modeling with a real experiment.