

INDUSTRY 4.0 VS INDUSTRY 3.0: THE ROLE OF PERSONNEL IN PRODUCTION

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The actual task is to prepare the specialists to work in the Industry 4.0 digital companies. There is an analysis of primary informative technologies and production equipment types to be used in the item designing companies of the Industry 3.0 and the Industry 4.0 smart factories. It is clear that knowledge and skills of production workers today are insufficient to complete analogue working functions in digital companies equipped with cyber and physical systems. Cyber and physical productions are created to deeply automatize the Industry 4.0 smart factories technological processes of the item manufacturing. Cyber and physical productions are applied in digital companies where functioning principles are based with the implementation of humanless and paperless technologies into production activity. There is a scheme of operator and numeric control machine interaction, which are applied in the Industry 3.0 companies. There is a scheme of cyber and physical system and operator interaction in the Industry 4.0 digital production. It is clear that the Industry 4.0 specialists preparation must be initiated today in parallel with advanced informative technologies development and production cyber and physical systems.

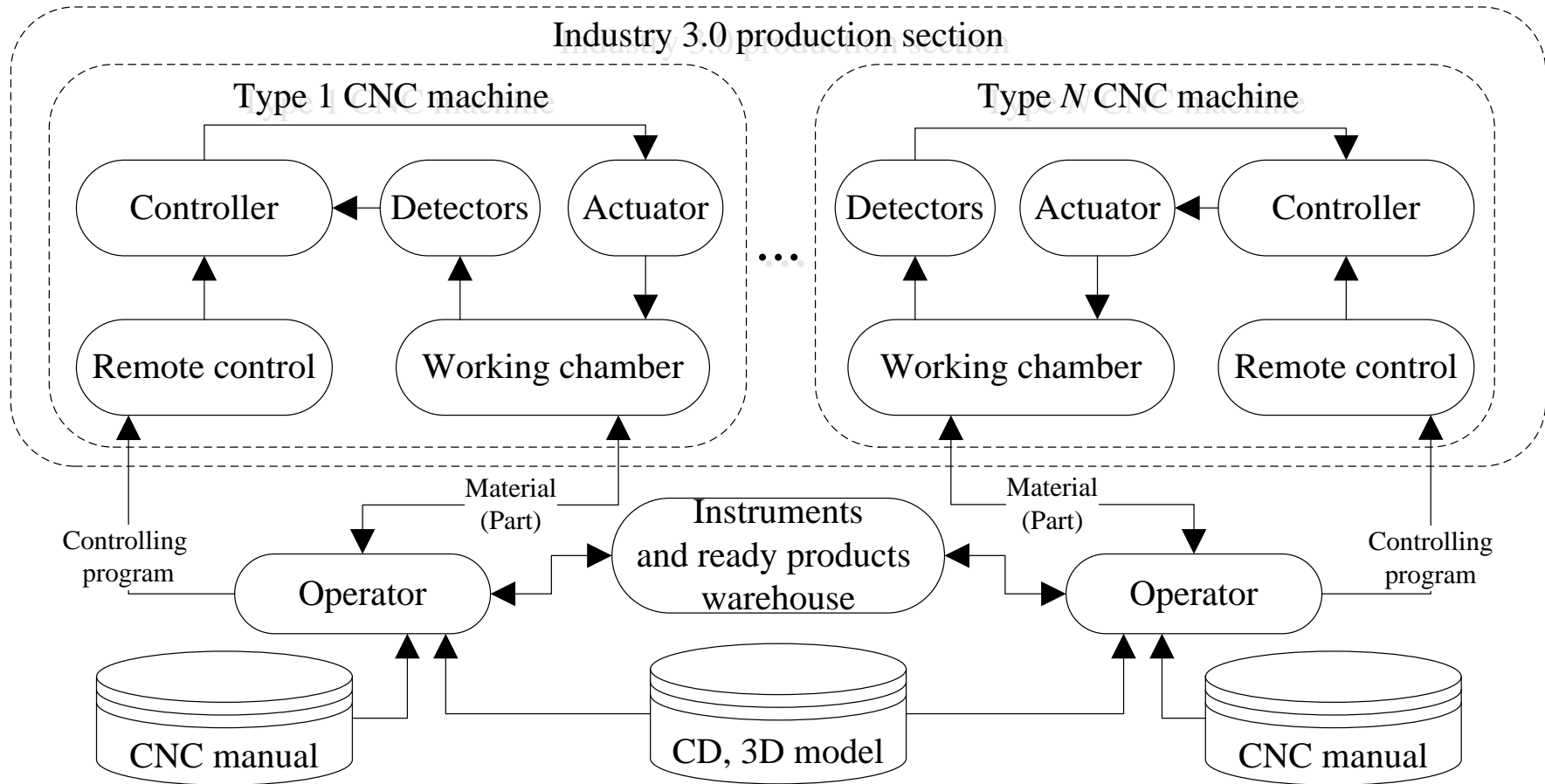


Figure 1. Interaction scheme of operator and CNC machine in the Industry 3.0 companies.

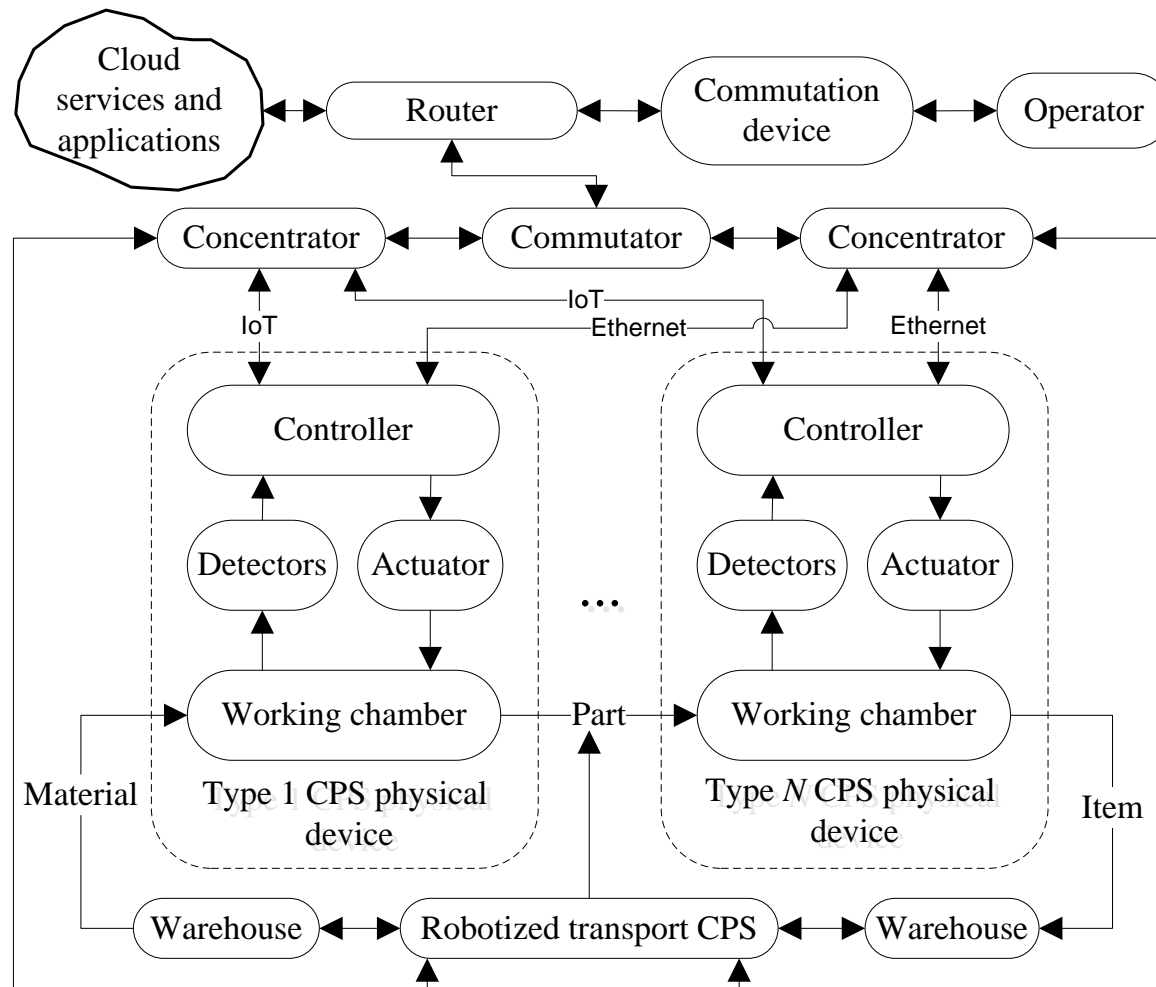


Figure 2. An interaction scheme of operator and cyber and physical system in the Industry 4.0 production.

Economy industrial sector automatizing on the modern stage leads to the significant re-distribution of the job market. If the company personnel role changes in next 10 years it will lead to:

- the appearance of new work occupations, which are vital for the Industry 4.0 digital companies;
- uselessness of some existing work occupations, which are vital for the Industry 3.0.

Specialists preparation knowing competences of new automatic production it is necessary to create branch competences centers with technological and cadres resources on the base of practice oriented educative programs.

Existing today practice to implement foreign technological equipment as the company production resources not only leads to the problem of the company information security but also creates a problem of the educative technologies security. New sets of educative documentation must be projected including the task of import substitution for laboratory and technical equipment engaged in the educative process of the Industry 4.0 specialists preparation.

The development of machine designing cyber and physical equipment nowadays must be done in parallel with highly qualified cadres preparation to exploit cyber and physical systems. Complex approach of the industry development and educative technologies guarantees the country priority in informative technologies and consumer markets of high tech products in the paradigm of the Industry 4.0 concept.