METALLURGICAL MANAGEMENT ELEMENTS

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Abstract: The methodology for establishing a technological plant's best management strategy is based on the "technological process – technological plant" interdependences. The paper presents the best management of a plant consist of an assembly of operations, measures and decisions, established and applied in order to make the technological process more efficient from the technical – economical point of view.

1. INTRODUCTION

The best management of a plant consist of an assembly of operations, measures and decisions, established and applied in order to make the technological process more efficient from the technical–economical point of view. For this, the best management is a problem's (technical, in this case) studying operation that has a result which, compared to other possible results, is the best, the most efficient result and the one on which a technical-economical decision is based [3].

2. MANAGEMENT ELEMENTS

The methodology for establishing a technological plant's best management strategy is based on the technological process-technological plant interdependences, briefly presented in figure no. 1.

Specific character of the metallurgical technological plant's best management consists of the rare complexity of the technological process, also proved by the high number of variables (parameters) which act independent or depend on the one another in time (1,2,3,…,i,…, figure no.1). From this point of view, the metallurgical technological plants' best management is based on efficient automatic calculus methods and techniques. Thus, the mathematical model represents the main element in the best management, [1].

In figure no. 2 there is presented the functional scheme of a technological process.

The main steps for the process of optimal leading of the technological plants, [3] are presented in figure no. 3. This steps have the following meanings:

1) FGOL – formulating the goal (aim) of the optimal leading;
2) EOF – establishing the objective function (performance criteria, function);
3) ICROF – identifying and cuantifying the parameters (variables) which influence the objective function;
4) STVOPP – studying the theories of variation for the objective function parameters (variables)

5) DRPTP – Defining the Restrictions for the Parameters of the Technological Plant;
6) CMMOL – Conceiving the Mathematical Model for the Optimal Leading;
7) FBSL – Finding the Best Solution of Leading;
8) VRCMM – Validing the Results of the Conceived Mathematical Model (through implementing the optimal leading of the technological plant, in different stages of functioning).

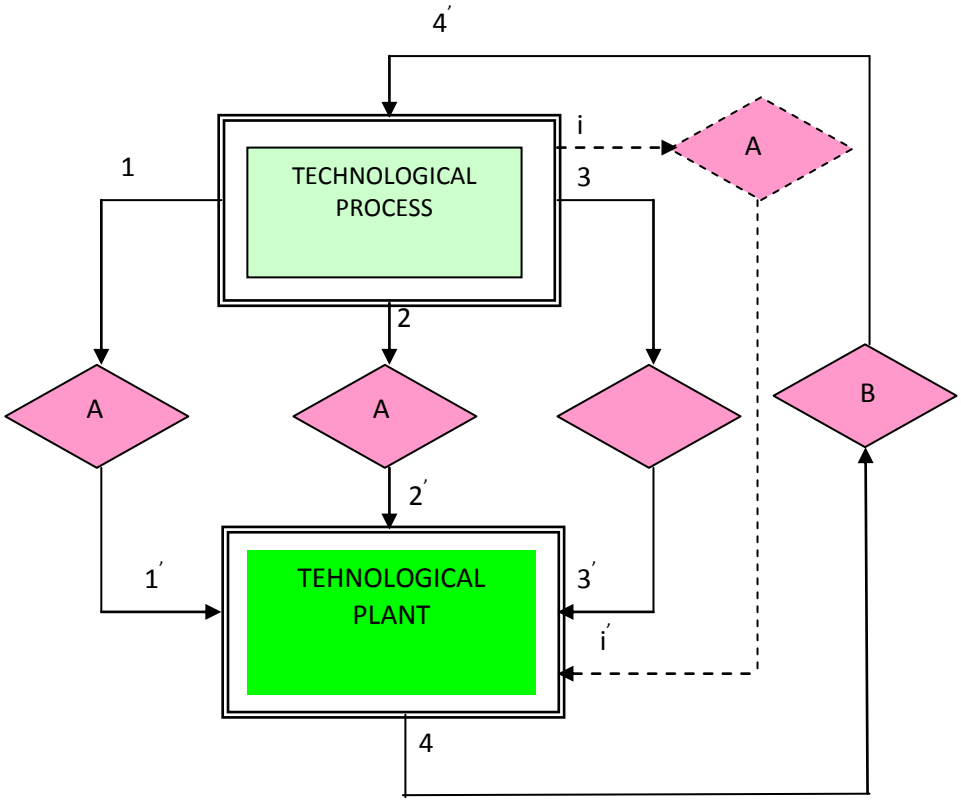

Fig. 1. The technological process - technological plant interdependences scheme 1,2,3,…,i,… - the technological process' parameters (variables); A – the technological process' parameters (variables) analysys from from the technological plant's ins point of view; 1′, 2′, 3′,…,I′,… - necessary parameters (variables) for the technological plant; 4 – parameters (variables) for the technological plant's outs; B - the technological process' parameters (variables) analysys from the technological process's ins point of view; 4′ – parameters (variables) offered by the technological plant to the technological process.

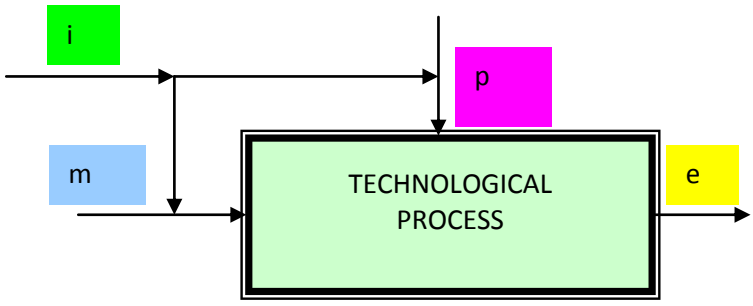

Fig. 2. The functional scheme of a technological process i – independent parameters (variables)-inputs; m – independent commanded parameters; p – independent not commanded parameters; e – dependent parameters-outputs

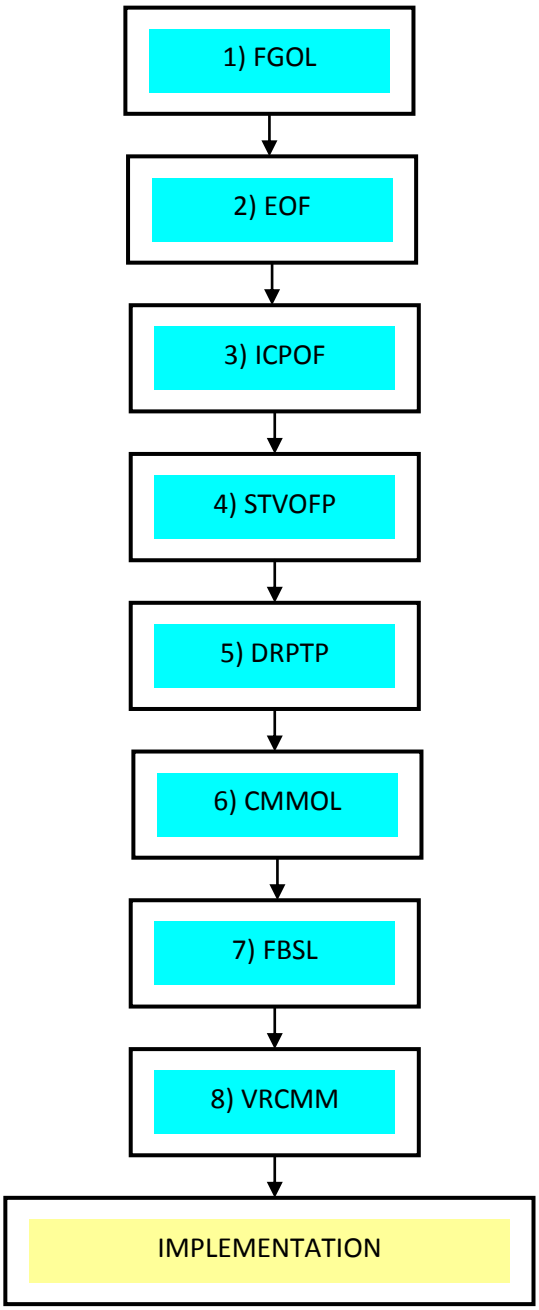

Fig. 3. The steps of the technological plants' management

3. CONCLUSION

The optimal leading of the technological plants may progress either in an off-line working system (which requires the active participation of the operators) or in an on-line working system, which level of performance. The optimal leading in on-line working system requires the technological plant to be equipped with both measuring, control adjustment devices and computerized in leading the technological process, including the necessary process interfaces.

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