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Polish Bridge Management System: Marking, Planning, Budgeting

Système polonais de gestion de ponts: évaluation, planification, budget

Das Polnische Brückenverwaltungssystem: Bezeichnung, Plannung, Budget

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Polish Bridge Management System /BMS/ has been designed as a set of autonomous modules. In Fig.1. are presented modules and main functions of BMS.

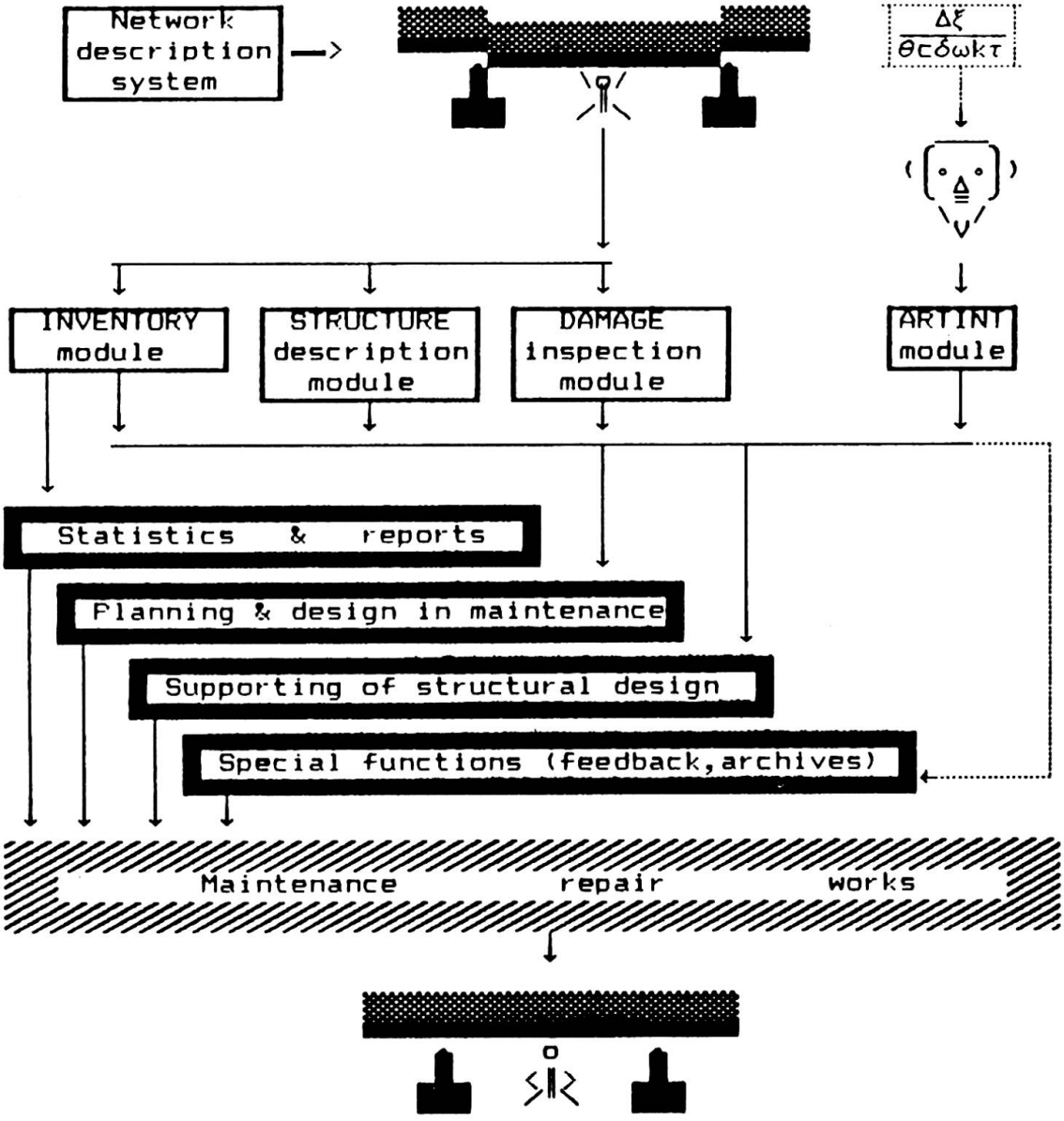

Fig.1 General diagram of Polish B M S

MARKING. Technical state of bridge structure is described by Bridge Serviceability Index /BSI/. BSI is calculated as a fuzzy value of the impairement level of structure. Logical operation of BSI calculation takes into account type of bridge structure, types of damaged elements, sorts of damages, location and intensity of damages. In target of bridge position on repair list settlement Total Bridge Serviceability Index /TBSI/ is calculated. Besides the value contained in BSI, bridge life service, traffic, accidents and important nontechnical data are included in TBSI calculation formula. Fig. 2. presents idea of fuzzy treatment of the BSI and TBSI.

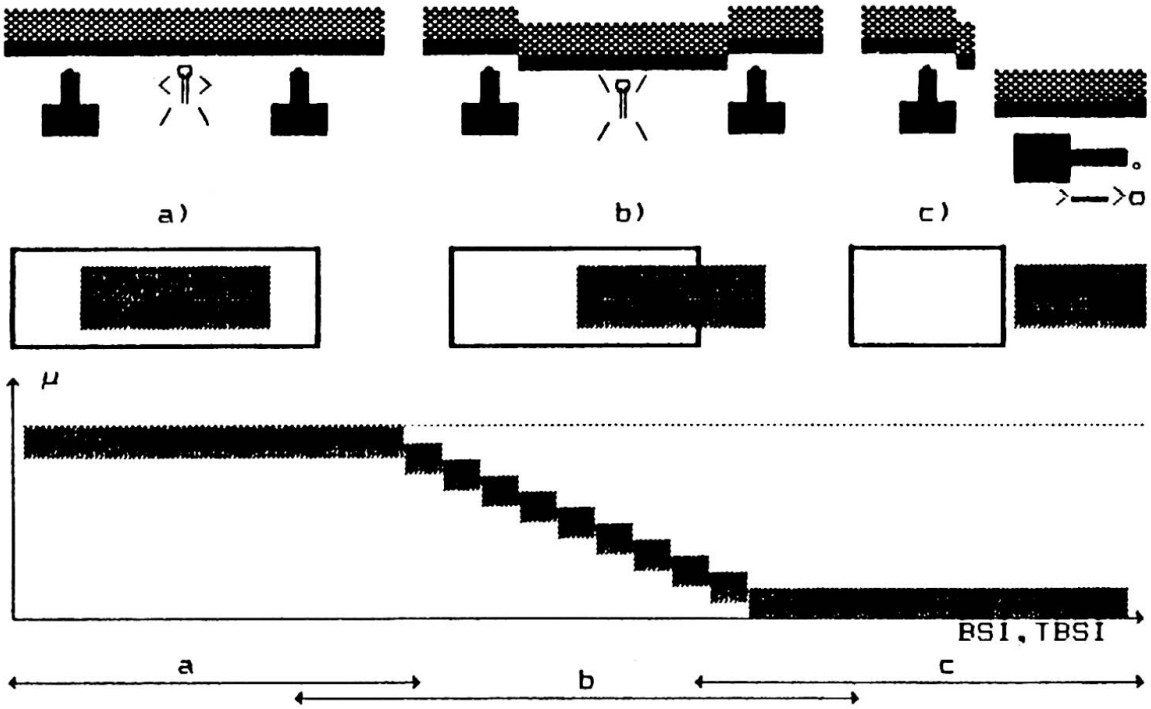

Fig.2 Idea of fuzzy treatment of the B S I & T B S I

PLANNING and BUDGETING. Position on repair list given by TBSI and various strategies of maintenance in fuzzy expression are main logical conditions of planning and budgeting process. Idea is contained in Fig.3.

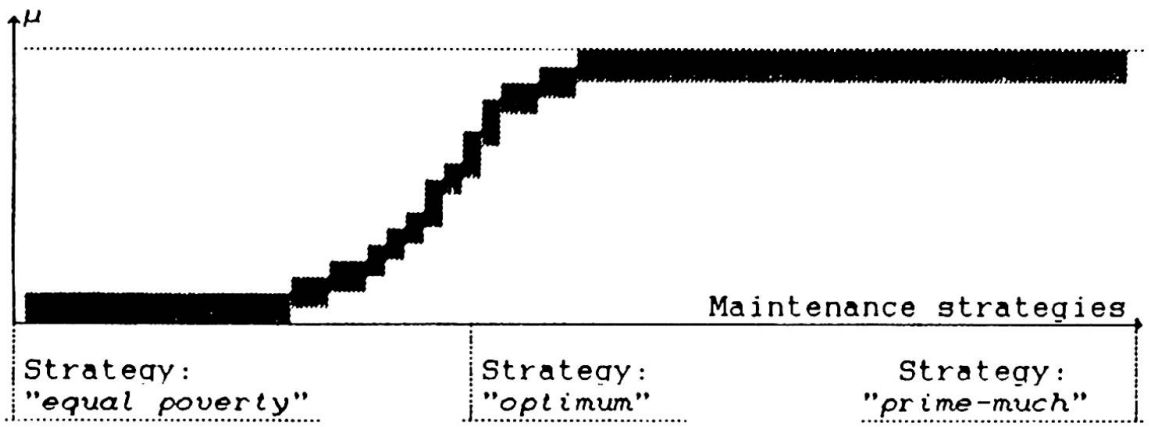

Fig.3 Fuzzy expression of maintenance strategies