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Modular Design of Totally Self-Checking Checkers for 1-Out-of-N Codes

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| **Author:** | C. Efstathiou  
C. Halatsis |
| **Abstract:** | This paper presents modular design methods of totally self-checking checkers (TSCCs) for 1-out-of-n (1/n) codes. In a modular method a number of 1-out-of-n TSCCs of lower rank are used to build a larger 1/n TSCC (n<n, n>6). Two modular design procedures are developed. The elementary modular design procedure in which the 1/4, 1/5, 1/6 TSCCs are used as modules to build any 1/n TSCC (n≥7), and the optimal modular design procedure, in which the problem of the most efficient decomposition of the 1/n TSCCs into arbitrary 1/n TSCCs of lower rank is investigated. |