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A RECURSIVE MODEL FOR THE EXTENDED SYSTEM $\mathcal{A}$ OF B. SOBOCIŃSKI

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In this note we construct a model in the recursive arithmetic of words over the alphabet $\mathcal{S}_2 = \{S_0, S_1\}$ for the extended system $\mathcal{A}$, which was introduced by B. Sobociński in [1], as a complete extension of author's original system **A** from [2]. With this, an error which appeared in [2], as pointed by B. Sobociński in [1], will now be eliminated.

As Sobociński's system $\mathcal{A}$ is not covered by I. Thomas's general construction in [4], we have to construct the model for $\mathcal{A}$ differently as in [3]. However, the principle is the same.

Presupposing the knowledge of our paper [3], we construct the model as follows. Interpret

(1) Cpq as $[1 \dot{-} \alpha(X)] \cdot Y$;
(2) Np as $S_1 \dot{-} X$;
(3) Kpq as $\alpha(S_1 \dot{-} X) \cdot (X+Y) + [1 \dot{-} \alpha(S_1 \dot{-} X)] \cdot S_1$

and

(4) Apq as
$$[1 \dot{-} \alpha(1 \dot{-} X)] \cdot \{[1 \dot{-} \alpha(1 \dot{-} Y)] \cdot S_1 + [1 \dot{-} \alpha(S_1 \dot{-} Y)] \cdot S_0\} + [1 \dot{-} \alpha(S_1 \dot{-} X)] \cdot \{[1 \dot{-} \alpha(1 \dot{-} Y)] \cdot S_0 + [1 \dot{-} \alpha(S_1 \dot{-} Y)] \cdot S_1\}.$$

We show that under this interpretation all axioms of $\mathcal{A}$ become provable equations of **RAW**; as to the rules of inference of $\mathcal{A}$, RI is the rule of substitution of **RAW** and RII is interpreted as (2.22) of [3], i.e. is provable in **RAW**.

We now interpret every axiom. The numeration of axioms is the numeration of [1]; primed numbers denote equations of **RAW** corresponding to axioms of $\mathcal{A}$ with the same unprimed number.

(F1). The corresponding equation in **RAW** is the equation (3.3) of [3], and was proved there.

(F2) $CNpCpq$.
(F2)' $[1 \dot{-} \alpha(S_1 \dot{-} X)] \cdot [1 \dot{-} \alpha(X)] \cdot Y = 0$.

The easy proof of this equation is by recursion in X.

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