??
??
f
$\frac{1}{2}$
$\underline{1} \cap_2 =$
$\underline{\emptyset}$
$\underline{2}$
$\underline{2}_N$
N

Product Construction (First Version).

product
PTA
q
$(\otimes, \overset{*}{\otimes}, \otimes, \otimes, \otimes, \otimes, \otimes, \otimes)$
$\otimes :=$
$\times$
$\overset{*}{\otimes} :=$
$(^*, q^\star)$
$q^\star$
$((,), (^*)) =$
$(q^\star,)$
$\otimes :=_1$
$\cup_2 :=$
$\otimes :=$
$\times$
$\otimes(,) :=$
$()$
$(,) \in_\otimes$
$\otimes((,), (a, R)) :=$
$(, a) \wedge$
ϕ_R
$(,) \in_\otimes$
ϕ_R
$\phi_R =$
R
$\otimes(,) :=$
$\{\}$ $(,) \in_\otimes$
$\otimes$
$\otimes((,), (a, R)) (Y, (',')) :=$
$\{ \quad (, a) (Y \cap_1, ')(, (')), \phi_R^{(')}, Y \cap_2, ') \in$
$0.$
$(, ('), \phi_R^{(')}, Y \cap_2, ')$
$\nu \in$
R
$\nu \in$
$\phi_R^{(')}$
(a, R)
$(, a)$
R
(a, R)
R
$\otimes$
(a, R)
$'$

$(, ('), \phi_R^{(')}, Y \cap_2, ')$
$'$

$Y \cap_2$
N

Product Construction (Second Version).

$\in$
$:= \{h :\to_2 \mid \forall b \in . (, b, h(b), X, ') \in X, ')\}.$

$\{\phi_b\}_{b \in}$
ϕ_b
b
product
PTA
q
$\otimes :=$
$\times \bigcup$
$\otimes((,), (a, h)) :=$
$(, a) \wedge$
$\bigwedge_{b \in} h(b)$
$(,) \in_\otimes$
$h \in$
$((,), (a, h)) :=$