

ma-sub^{11,40}

$$\begin{aligned}
M_1 &\subseteq M_2 \\
\equiv_{\text{def}} & (M_1.1 \subseteq M_2.1 \ \& \ (M_1.2).1 \subseteq (M_2.2).1) \\
& \text{c}\wedge ((M_1.2.2).1 \subseteq (M_2.2.2).1 \\
& \quad \& \ (M_1.2.2.2).1 \subseteq (M_2.2.2.2).1 \\
& \quad \& \ (M_1.2.2.2.2).1 \subseteq (M_2.2.2.2.2).1 \\
& \quad \& \ (M_1.2.2.2.2.2).1 \subseteq (M_2.2.2.2.2.2).1 \\
& \quad \& \ (M_1.2.2.2.2.2.2).1 \subseteq (M_2.2.2.2.2.2.2).1 \\
& \quad \& \ (M_1.2.2.2.2.2.2.2).1 \subseteq (M_2.2.2.2.2.2.2.2).1 \\
& \quad \& \ (M_1.2.2.2.2.2.2.2.2).1 \subseteq (M_2.2.2.2.2.2.2.2.2).1 \\
& \quad \& \ (M_1.2.2.2.2.2.2.2.2.2).1 \subseteq (M_2.2.2.2.2.2.2.2.2.2).1)
\end{aligned}$$

clarification:

$$\begin{aligned}
&\text{ma-sub}\{i:l\} \\
& \quad (M_1; M_2) \\
\equiv_{\text{def}} & (\text{fpf-sub}(\text{Id}; x.\text{Type}\{i\}; \text{IdDeq}; (M_1.1); (M_2.1)) \\
& \quad \& \text{fpf-sub}(\text{Knd}; x.\text{Type}\{i\}; \text{KindDeq}; ((M_1.2).1); ((M_2.2).1))) \\
& \text{c}\wedge (\text{fpf-sub}(\text{Id}; x.(\mathbb{Q} \rightarrow \text{fpf-cap}(M_2.1; \text{IdDeq}; x; \text{Void})); \text{IdDeq}; ((M_1.2.2).1); ((M_2.2.2).1)) \\
& \quad \& \text{fpf-sub}(\text{Id}; a.(\text{State}(M_2.1) \rightarrow \mathbb{B}); \text{IdDeq}; ((M_1.2.2.2).1); ((M_2.2.2.2).1)) \\
& \quad \& \text{fpf-sub}((: \text{Knd} \times \text{Id}); \\
& \quad \quad kx.(\text{State}(M_2.1) \rightarrow \text{Valtype}((M_2.2).1; kx.1) \rightarrow \mathbb{Q} \rightarrow \\
& \quad \quad \text{fpf-cap}(M_2.1; \text{IdDeq}; kx.2; \text{Void})); \\
& \quad \quad \text{product-deq}(\text{Knd}; \text{Id}; \text{KindDeq}; \text{IdDeq}); \\
& \quad \quad ((M_1.2.2.2.2).1); \\
& \quad \quad ((M_2.2.2.2.2).1)) \\
& \quad \& \text{fpf-sub}((: \text{Knd} \times \text{IdLnk}); \\
& \quad \quad kl.((tg: \text{Id} \\
& \quad \quad \times (\text{State}(M_2.1) \rightarrow \text{Valtype}((M_2.2).1; kl.1) \rightarrow \\
& \quad \quad (\text{fpf-cap}((M_2.2).1; \text{KindDeq}; \text{rev}(kl.2, tg); \text{Void}) \text{ List}))) \text{ List}); \\
& \quad \quad \text{product-deq}(\text{Knd}; \text{IdLnk}; \text{KindDeq}; \text{IdLnkDeq}); \\
& \quad \quad ((M_1.2.2.2.2.2).1); \\
& \quad \quad ((M_2.2.2.2.2.2).1)) \\
& \quad \& \text{fpf-sub}(\text{Id}; x.(\text{Knd} \text{ List}); \text{IdDeq}; ((M_1.2.2.2.2.2.2).1); ((M_2.2.2.2.2.2.2).1)) \\
& \quad \& \text{fpf-sub}((: \text{IdLnk} \times \text{Id}); \\
& \quad \quad ltg.(\text{Knd} \text{ List}); \\
& \quad \quad \text{product-deq}(\text{IdLnk}; \text{Id}; \text{IdLnkDeq}; \text{IdDeq}); \\
& \quad \quad ((M_1.2.2.2.2.2.2.2).1); \\
& \quad \quad ((M_2.2.2.2.2.2.2.2).1)) \\
& \quad \& \text{fpf-sub}(\text{Knd}; \\
& \quad \quad k.(\text{Id} \text{ List});
\end{aligned}$$

```

KindDeq;
((M1.2.2.2.2.2.2.2).1);
((M2.2.2.2.2.2.2.2).1))
& fpf-sub(Knd;
  k.(IdLnk List);
  KindDeq;
  ((M1.2.2.2.2.2.2.2.2).1);
  ((M2.2.2.2.2.2.2.2.2).1))
& fpf-sub(Id;
  x.(Knd List);
  IdDeq;
  ((M1.2.2.2.2.2.2.2.2.2).1);
  ((M2.2.2.2.2.2.2.2.2.2).1))
& fpf-sub(Id;
  x.FinProbSpace;
  IdDeq;
  ((M1.2.2.2.2.2.2.2.2.2.2).1);
  ((M2.2.2.2.2.2.2.2.2.2.2).1)))

```