Shutherland-Hodgman [1]

Remark. Originally, this protocol has one choice where the destination is not the same across all branches (when choosing , or). This may or may not be allowed depending on the specific formal variant of MPST you choose.
In this benchmark, we reordered them so that the order is always $P \to R \{ \ell.P \to C \{ \ell.G \} \}$.

$$P \to R \left\{ \begin{array}{l} Plane(\langle \texttt{point}, \texttt{point}, \texttt{point}, \texttt{point} \rangle).\mu \texttt{t}.P \to R \left\{ \begin{array}{l} IsAbove(\texttt{point}).R \to P \left\{ \begin{array}{l} Res(\texttt{bool}).P \to R \left\{ \begin{array}{l} IsAbove(\texttt{point}).R \to P \left\{ \begin{array}{l} Res(\texttt{bool}). \left\{ \begin{array}{l} P \to R \{ BothIn.P \to C \{ BothIn(\texttt{Point}).\texttt{t} \} \} \\ P \to R \{ BothOut.P \to C \{ BothOut(\texttt{Point}).\texttt{t} \} \} \\ P \to R \left\{ Intersect(\langle \texttt{Point}, \texttt{Point} \rangle).R \to P \left\{ Res(\texttt{point}).P \to C \left\{ \begin{array}{l} SecOut(\texttt{point}).\texttt{t} \\ SecIn(\langle \texttt{point}, \texttt{point} \rangle).\texttt{t} \end{array} \right. \right. \right. \end{array} \right. \end{array} \right. \end{array} \right. \\ Close.P \to C \{ Close.\texttt{end} \} \end{array} \right. \end{array} \right. \end{array} \right.$$

References

[1] Rumyana Neykova, Raymond Hu, Nobuko Yoshida, and Fahd Abdeljallal. A session type provider: Compile-time API generation of distributed protocols with refinements in F#. In *Proceedings of the 27th International Conference on Compiler Construction*, pages 128–138, Vienna Austria, February 2018. ACM.