

$$\begin{aligned}
& (\boxtimes)(\neg(MinorF_{John} \wedge \\
& AdultF_{John}) \wedge \\
& (MinorF_{John} \rightarrow PersonF_{John}) \wedge \\
& (AdultF_{John} \rightarrow PersonF_{John}) \wedge \\
& (AdultF_{John} \rightarrow BOX0F_{John}) \wedge \\
& (PersonF_{John} \leftrightarrow PersonP_{John}) \wedge \\
& (BOX0F_{John} \leftrightarrow BOX1P_{John}) \wedge \\
& \Box_F((\bigcirc_F BOX1P_{John} \leftrightarrow (\bigcirc_F AdultP_{John} \wedge \\
& BOX1P_{John})) \wedge \\
& (BOX0F_{John} \leftrightarrow \Box_F AdultF_{John})) \wedge \\
& (AdultF_{John} \leftrightarrow AdultP_{John}) \wedge \\
& (MinorF_{John} \leftrightarrow MinorP_{John})) \wedge \\
& MinorF_{John})
\end{aligned}$$