

$$\begin{aligned}
& (\boxtimes((DIAMOND1F_{John} \leftrightarrow DIAMOND2P_{John}) \wedge \\
& \Box_F((DIAMOND2P_{John} \leftrightarrow \Diamond_F MinorP_{John}) \wedge \\
& (\bigcirc_F DIAMOND1F_{John} \leftrightarrow (\bigcirc_F MinorF_{John} \vee DIAMOND1F_{John}))) \wedge \\
& (BOX0F_{John} \leftrightarrow \Box_F BOX5F_{John}) \wedge \\
& (BOX4P_{John} \leftrightarrow \Box_F(AdultP_{John} \rightarrow DIAMOND2P_{John})) \wedge \\
& (\bigcirc_F BOX5F_{John} \leftrightarrow (\bigcirc_F(AdultF_{John} \rightarrow DIAMOND1F_{John}) \wedge \\
& BOX5F_{John})) \wedge \\
& (\bigcirc_F BOX3P_{John} \leftrightarrow (\bigcirc_F BOX4P_{John} \wedge \\
& BOX3P_{John}))) \wedge \\
& (AdultF_{John} \leftrightarrow AdultP_{John}) \wedge \\
& BOX0F_{John} \wedge \\
& (BOX5F_{John} \leftrightarrow BOX4P_{John}) \wedge \\
& (MinorF_{John} \leftrightarrow MinorP_{John}) \wedge \\
& (BOX0F_{John} \leftrightarrow BOX3P_{John})) \wedge \\
& MinorF_{John})
\end{aligned}$$