INCREMENTALITY IN MODEL TRANSFORMATION WITH TRIPLE GRAPH GRAMMARS

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Consistency
Model Transformation

\[ G_S \leftrightarrow \emptyset \rightarrow G_T \]

\[ G_S \leftrightarrow \emptyset \rightarrow \ldots \rightarrow G_T \]
Model synchronization
Incremental model synchronization

Model synchronization is incremental if we build $G'_T$ reusing (parts of / as much as possible of) $G_T$
Incremental model synchronization

Model synchronization is incremental if its computational cost depends on the size of $u_S$ rather than on the size of $G_S$, $G'_S$ and $G_T$.

H. Giese, R. Wagner: From model transformation to incremental bidirectional model synchronization. SoSym 8, 21–43 (2009)
Non-incremental Model Synchronization

\[ G'_S \leftrightarrow \emptyset \quad p_1^F \quad \ldots \quad p_n^F \quad G'_S \leftrightarrow G'_T \]
Transformation rules

class-table creation
Transformation rules

attribute-column creation
Transformation rules

Subclass creation
Transformation rules

Foo creation
Transformation rules

subattribute - subcolumn creation
$G_S \leftrightarrow G_T$
Conclusion

- Incrementality may refer to how much we reuse from the given target model or to the performance of the synchronization procedure.

- In any case, we have different degrees of incrementality.