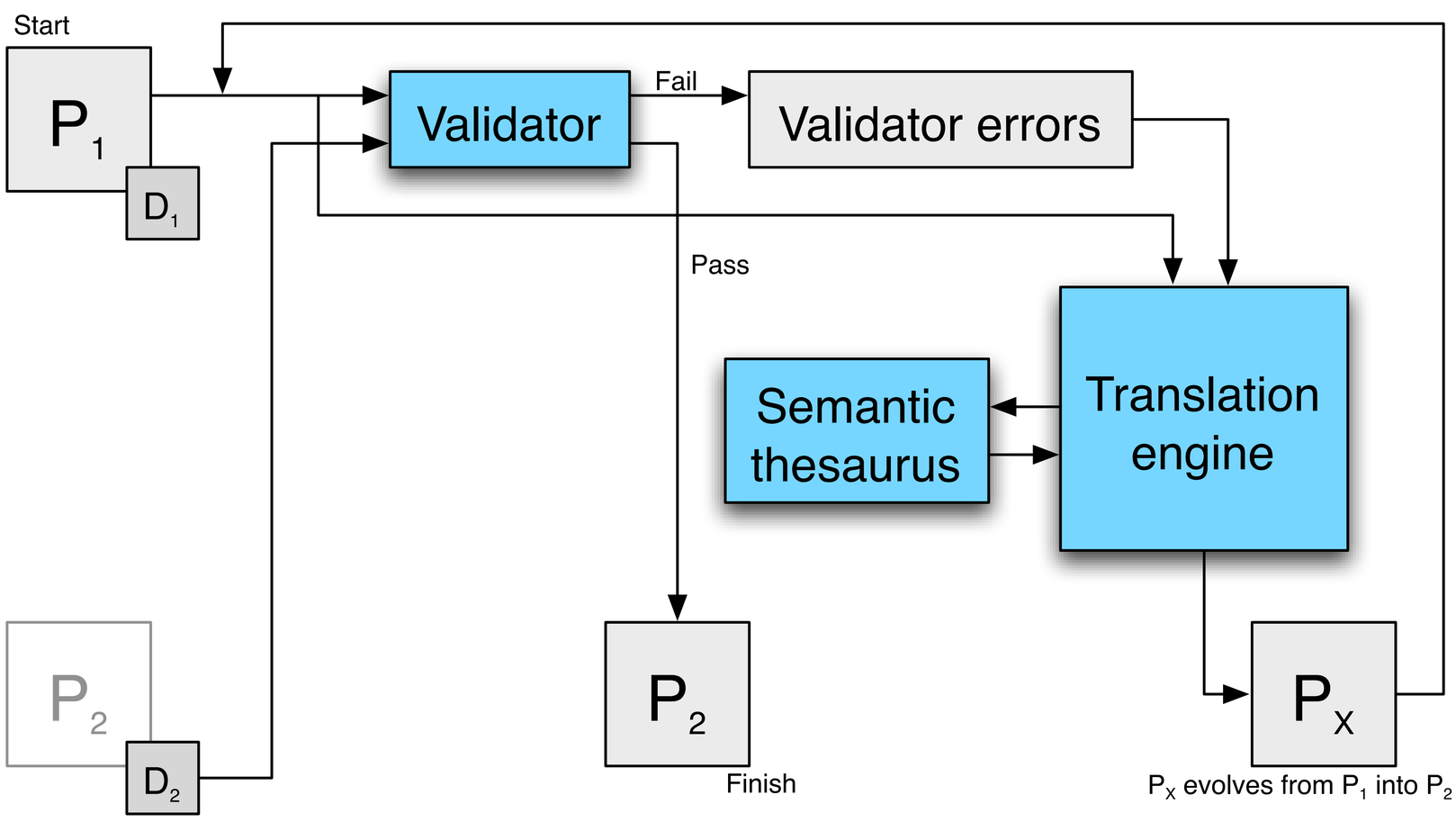
Reducing the Complexity of Semantic Data Translation

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Building a direct translator between every pair of languages in a system requires *n(n-1)* translators. We propose a system which reduces this complexity to 1 translator and *n* syntactic descriptors.



The system converts a source program, P_1 into the target program P_2. Both P_1 and P_2 have associated syntactic descriptors known as D_1 and D_2. The Validator takes P_1 and validates it against D_2 to produce a set of validator errors.

The Translation Engine uses these errors to produce a new version of P_1 (known as P_X) where the errors have been resolved. The Semantic thesaurus provides synonyms for language elements found within the program being translated.

The validator is based on the conformant schema-aware processor, XSV. This validator takes an XML document together with an XML Schema (XSD file). The translation engine attempts to resolve the validator errors by referring to a semantic thesaurus which consists of a large collection of synonyms for language elements. The thesaurus may be specific to the domain of languages being translated (e.g. graphics languages), or could be general purpose.

When a version of P_X correctly validates against D_2, this version of P_X is deemed to be a successful translation to P_2 and the process is complete.

