# **BNF Tools Version 2.0: Migration Notes**

Discovered features in version 1.0 and their migration status, as well as further migration notes are summarised below.

### **Core Features:**

- 1. BNF front-end (Parser, Lexer, Linker, etc.)
- 2. translates a textual representation into an Ecore model
- 3. Editor provides IDE features, e.g. auto-completion, syntax highlighting, etc.

#### Validation Rules:

These rules will give warnings in the editor if they find find consistencies in the code.

- 1. *checkUpdateGrammarConsistency:* checks, if the grammar is an updated grammar, for consistencies between the originals and the new grammar
  - ♦ status: not migrated
- 2. *checkReferencedOnlyOnce:* this should warn if there is a rule that is only referenced once, this is an inlining hint

♦ status: migrated

- 3. *checkPassthroughRule:* this tests if a rule gets just passed through, e.g. a ::= b, b ::= "literal" <=> a ::= "literal", which is better for EBNF
  - ♦ status: migrated
- 4. *checkEqualAlternative:* this tests if a rule got equal alternatives, e.g.: a ::= d + d

♦ status: migrated

- 5. *checkDuplicateRules:* checks if there is another rule in the EtsiBnf, that has the same right hand side, e.g.: a ::= "literal" | b, c ::= "literal" | b
  - status: migrated
- 6. checkSubruleDuplicates:
  - status: not migrated
- 7. check unused rule: checks if a rule is used (exept for the rule with the number 1)
  - ♦ status: migrated
- 8. checkNameIsUnique: checks if the name of a rule is already in use e.g. a ::= "end", a ::= "fin"
  - ♦ status: migrated

#### **Generation:**

Generating an intermediate xsl-fo representation for all BNF grammars (merge or delta grammars not supported). This can be rendered to PDF using apache-fop

• status: in progress

### Formatting:

• old: had some but they are got commented out in the main project

• *new:* line-break after every rule, white-spaces after all literals, possible update linebreak and double tab after all >l< bars

## **Refactoring and Quick-fixing:**

Automated restructuring support.

1. auto Numbering of rules

- ♦ status: not migrated
- 2. remove unused rules
  - ♦ status: migrated
- 3. replacement of passthroughRules
  - ♦ status: not migrated
- 4. refactor uppercasetokenRules
  - ♦ status: not migrated
- 5. find references
  - ♦ status: provided by xtext2

6. renaming

status: provided by xtext2

# **Grammar Composition:**

- 3 grammartypes:
  - grammar: normal grammar
  - delta grammar: different notation for a extension grammar,
    - ♦ adds new rules to a grammar (regular rules) and adds changes to rules of the extended grammar (extension rules) (can be automatically created)
  - merge grammar: for merging extensions
- old version had an automatic composition process for merge grammars with a small pop-up-menu.
- at the moment no support in the new version

#### **Deployment:**

- export project as Plugin: Plug-in Development/deployable plug-ins and fragments
- RCP project with a minimal eclipse editor: TBD