

# BNF Tools Version 2.0: Migration Notes and Feature List

## 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 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 (except 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 `>`/`<` 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