

Developer Jam Session

# Advanced Speech Grammar Management with the Professional Edition of NuGram IDE

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- Introduction  
*Tobias Göbel, Sr. Presales Consultant, Voxeo Germany*
- NuGram Professional Edition  
*Dominique Boucher, Product Manager – NuGram, Nu Echo*
- Demo & VoiceObjects/NuGram Integration  
*Tobias Göbel*
- NuGram Roadmap  
*Dominique Boucher*
- Q&A

- Grammar development is crucial for the success of a voice application



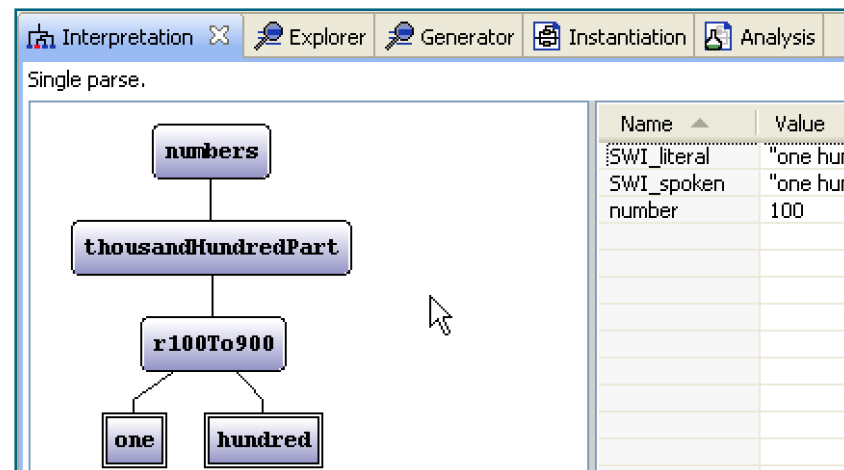
**Voxeo joins forces with NuEcho to bundle  
NuGram IDE with VoiceObjects**

- Integrated download of **VoiceObjects Developer Edition** and **NuGram IDE Basic Edition**
- **NuGram IDE Professional Edition** for the more advanced speech projects

# NuGram's Mission



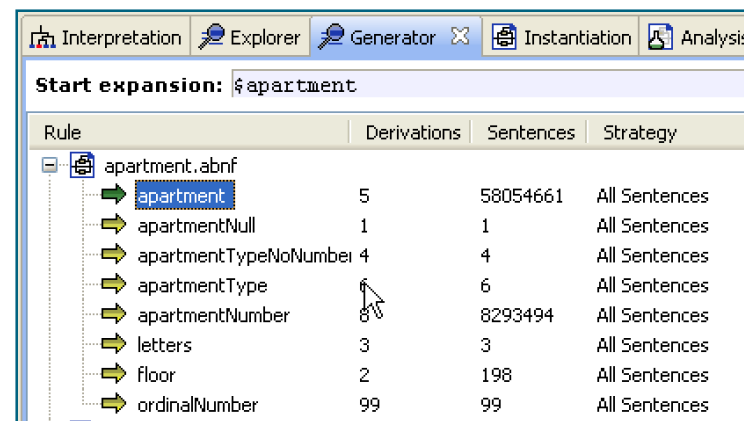
- Provide tools to deliver rock-solid grammars
  - Increase confidence in the grammars put in production
- Increase productivity
  - Quickly see the impact of changes
  - Help avoid most errors (refactoring tools, auto-complete, etc.)
  - Catch errors as early as possible
  - No distinction between static and dynamic grammars
- Reduce costs and time to market
  - Minimize costly fix & redeployment loops
  - No need to develop an in-house solution for dynamic grammars



***“Great speech applications simply don’t happen by accident”***

- Targets serious developers and professional services organizations
  - Support for rigorous development processes
  - More advanced grammar testing tools
  - Complete solution for dynamic grammars
    - *Test in NuGram IDE*
    - *Deploy on NuGram Server*

- Advanced generation and coverage tools
  - New sentence generation strategies, rule-specific sentences in coverage tool, etc.
- Batch grammar importers
- Project coverage testing tool
- Ant Tasks
  - Conversion
  - Coverage
  - Instantiation
  - Vocabulary extraction
- Advanced dynamic grammar generation tools
  - Interface to Java code or external programs
- NuGram Server SDK



The screenshot shows the NuGram IDE Pro interface with the 'Generator' tab active. The 'Start expansion' field is set to '\$apartment'. Below it is a table with columns for Rule, Derivations, Sentences, and Strategy.

Rule	Derivations	Sentences	Strategy
apartment.abnf			
apartment	5	58054661	All Sentences
apartmentNull	1	1	All Sentences
apartmentTypeNoNumber	4	4	All Sentences
apartmentType	6	6	All Sentences
apartmentNumber	8	8293494	All Sentences
letters	3	3	All Sentences
floor	2	198	All Sentences
ordinalNumber	99	99	All Sentences

# NuGram Server

- Runtime infrastructure to deploy dynamic grammars
  - Java Servlet technology
    - *Can run in parallel/be packaged with your application*
  - Outputs grammars in ABNF, XML, GSL
  - Fine-grained control of caching strategy
  - Two sets of APIs (REST or “JSP-like”)
- Supports all NuGram Services
  - Dynamic grammar instantiation and generation
  - Sentence interpretation (text-based)
- Hosted version at [www.grammarserver.com](http://www.grammarserver.com)  
and client APIs on [github.com/nuecho](https://github.com/nuecho)

# Basic vs. Pro

<u>Feature</u>	<u>Basic Edition</u>	<u>Professional Edition</u>
Full-featured grammar/template editor with syntax coloring, auto-complete, powerful refactoring tools, etc.	√	√
Sentence explorer	√	√
Sentence interpreter	√	√
Semantic single-stepper	√	√
Basic sentence generator (all sentences)	√	√
Instantiation debugger	√	√
Coverage tool	√	√
Full support (edition, execution, debugging) for leading tag formats: <ul style="list-style-type: none"> <li>•semantics/1.0, semantics/1.0-literals (SISR)</li> <li>•semantics/1.0 (pre-SISR – IBM)</li> <li>•semantics/1.0.2006, semantics/1.0.2006-literals (LumenVox)</li> <li>•swi-semantics/1.0 (OSR, Nuance 9)</li> <li>•semantics-ms/1.0 (Microsoft)</li> <li>•nuance (GSL)</li> </ul>	√	√

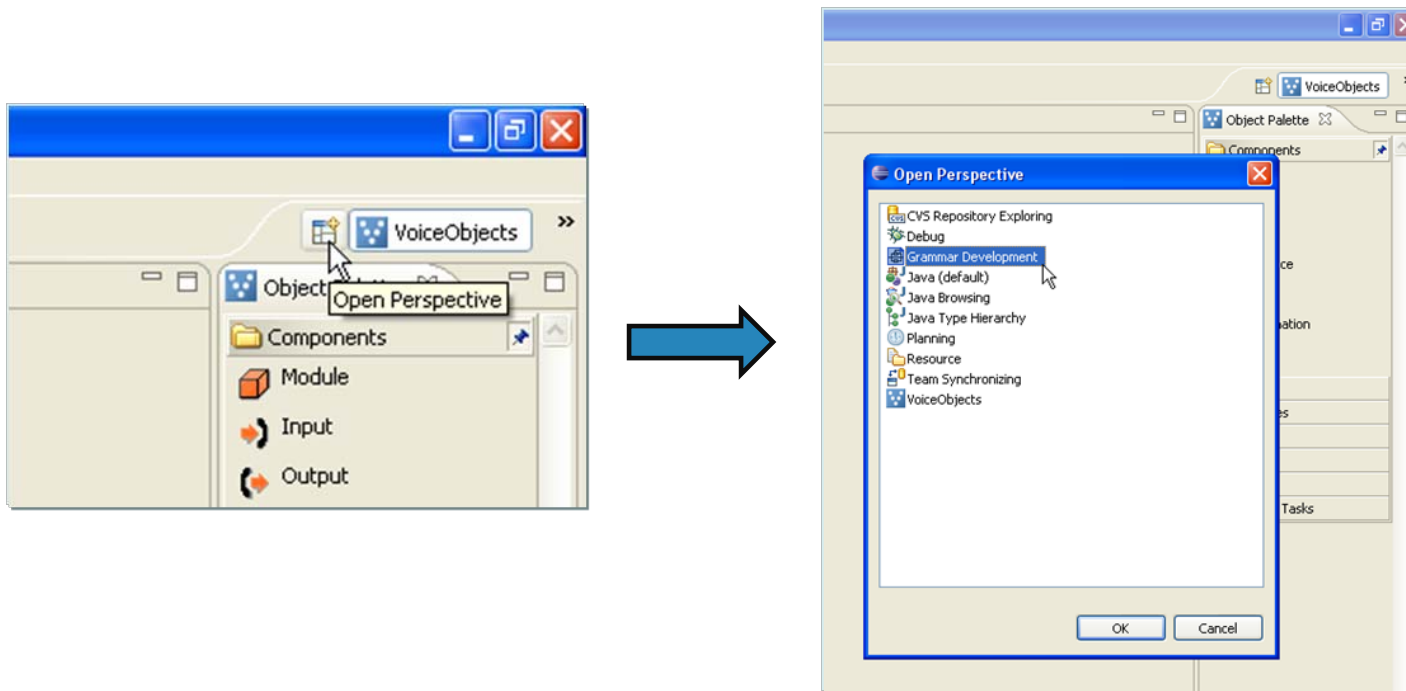
# Basic vs. Pro (cont'd)

<u>Feature</u>	<u>Basic Edition</u>	<u>Professional Edition</u>
Support for Nuance 9 SISR extensions	√	√
Grammar importer (GrXML, GSL)	√	√
Limited support for Lumenvox phonetic spellings	√	√
Project / directory publishing to NuGram Hosted Server	√	√
Advanced sentence generator with highly configurable, rule-specific sentence generation strategies		√
Programmatic instantiation context building		√
SWI_vars support		√
Project coverage testing tool		√
Support for rule-specific sentences in coverage tool		√
Batch grammar importer		√
Automatic conversion		√
Batch tools (for use in a build script)		√
NuGram Server development license		√
Software support		√
Major and minor upgrades		√

Let's see all this in action!

# VoiceObjects / NuGram integration

- NuGram IDE Basic Edition comes pre-installed with VoiceObjects Developer Edition 9.0 R1



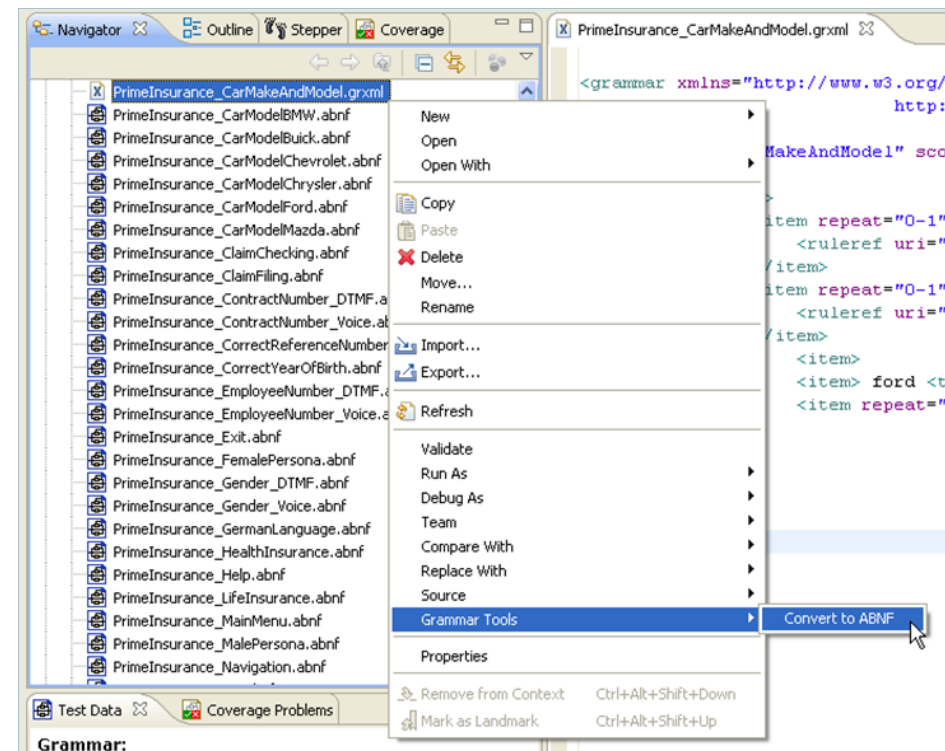
- Latest version: [http://nugram.nuecho.com/nugram\\_ide](http://nugram.nuecho.com/nugram_ide)

# Prime Insurance sample grammars

- VoiceObjects installation ships with **ABNF grammars** from Prime Insurance sample application

Resources\Samples\PrimeInsurance\Grammar\

- Any existing GRXML or GSL grammar can be converted to ABNF:



- Find the full **documentation** online:  
<http://developers.voiceobjects.com/support-training/developer-edition/voiceobjects-documentation/>
  - “NuGram IDE Reference Guide”
  
- Download VoiceObjects **Grammar Server connector**  
<http://developers.voiceobjects.com/support-training/developer-edition/demos-templates/#NuEcho>
  - To integrate VoiceObjects with NuGram Server for dynamic grammars

# NuGram Roadmap

- NuGram 2.5
  - Pronunciation lexicons support
  - Robust parsing
  - Grammar weights computation tool
  - Post-processing service (NuGram Server)
  - Multi-tag support
- NuGram 2.6
  - Context Initializer Scripting (NuGram Server)
  - Normalization framework and rules editor
  - Discriminative grammar weights computation tool
- NuGram 3.0
  - Support for Statistical Language Models (SLMs)

# Next Developer Jam Session



**Topic:** IMify your voice application!  
Exploring new ways of customer interaction with  
Voxeo VoiceObjects and IMified

**Date:** Wednesday, 7 October 2009, 11am EDT

**Speaker:** Dave Hoff, Tobias Göbel

[Click here to register now](#)