



# Effective Grammar Development & Testing



Yves Normandin



Michael Codini



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# Effective Grammar Development & Testing



Welcome to VoiceObjects' **Developer Jam Session!**



## AGENDA:

- Today's Goal  
*Michael Codini, CTO, VoiceObjects*
- Introducing Nu Echo  
*Yves Normandin, CEO, Nu Echo*
- Live Demo – VoiceObjects Desktop + NuGram IDE  
*Tobias Göbel, Senior Pre-Sales Consultant, VoiceObjects*
- Q & A

## Some Remarks:

- Please use the WebEx chat panel to send us questions during the session
- All questions will be answered at the end in the Q&A section
- Please mute your phone during the session to improve the overall audio quality



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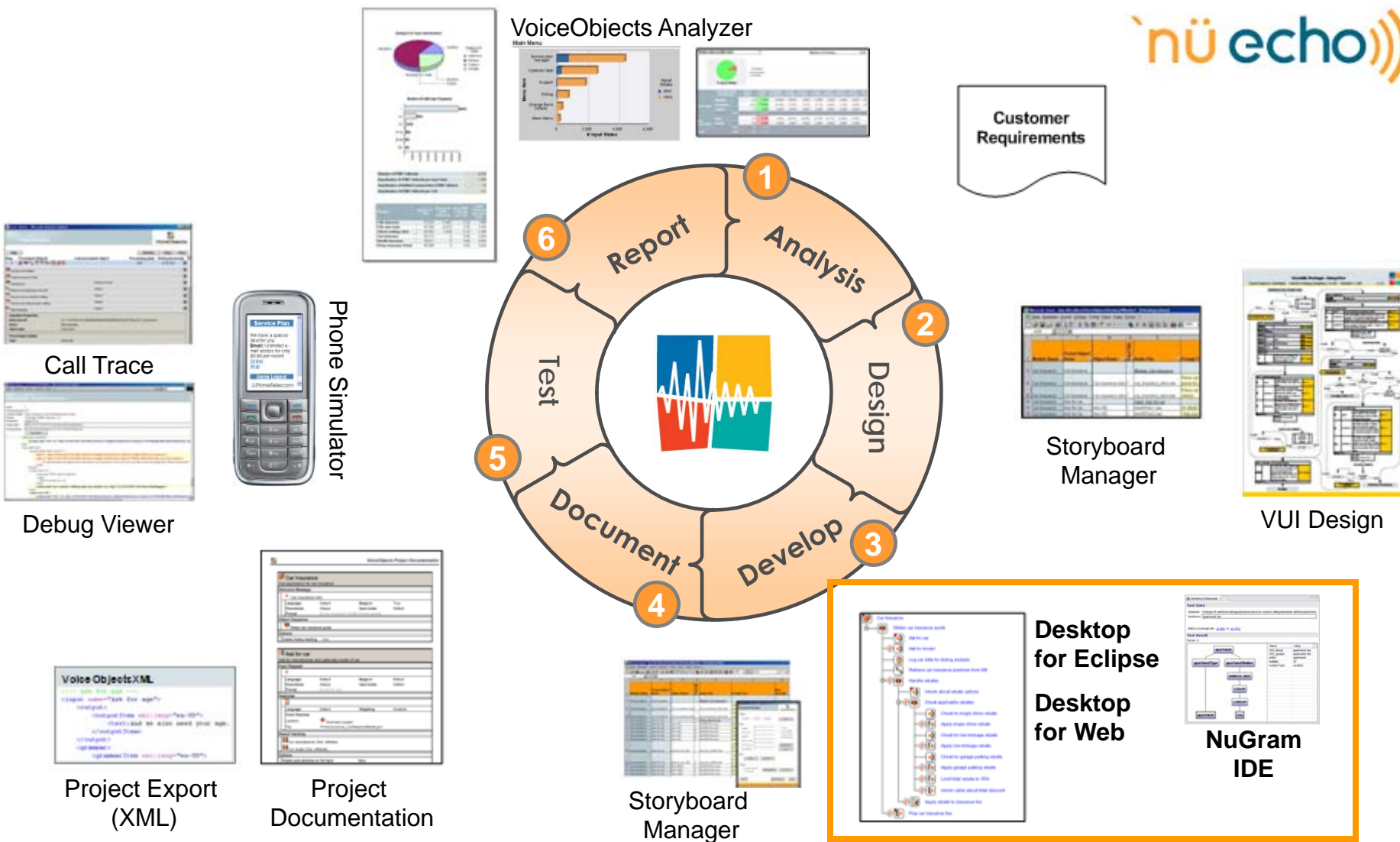
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# Today's Goal





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# Nu Echo – Overview



- Founded in 2002. Our mission:
  - To develop the highest performance speech applications on the market
    - *Automation rate*
    - *User experience*
  
- What we do:
  - Develop tools and technologies
    - *Grammar development*
    - *Tuning*
    - *Automated testing*
  - Develop highly optimized packaged applications (modules)
    - *Address capture, identity verification, branch location, etc.*
  - Provide professional services
    - *VoiceXML application development, grammar development & tuning, application testing, consulting*



# Nu Echo – NuGram Platform

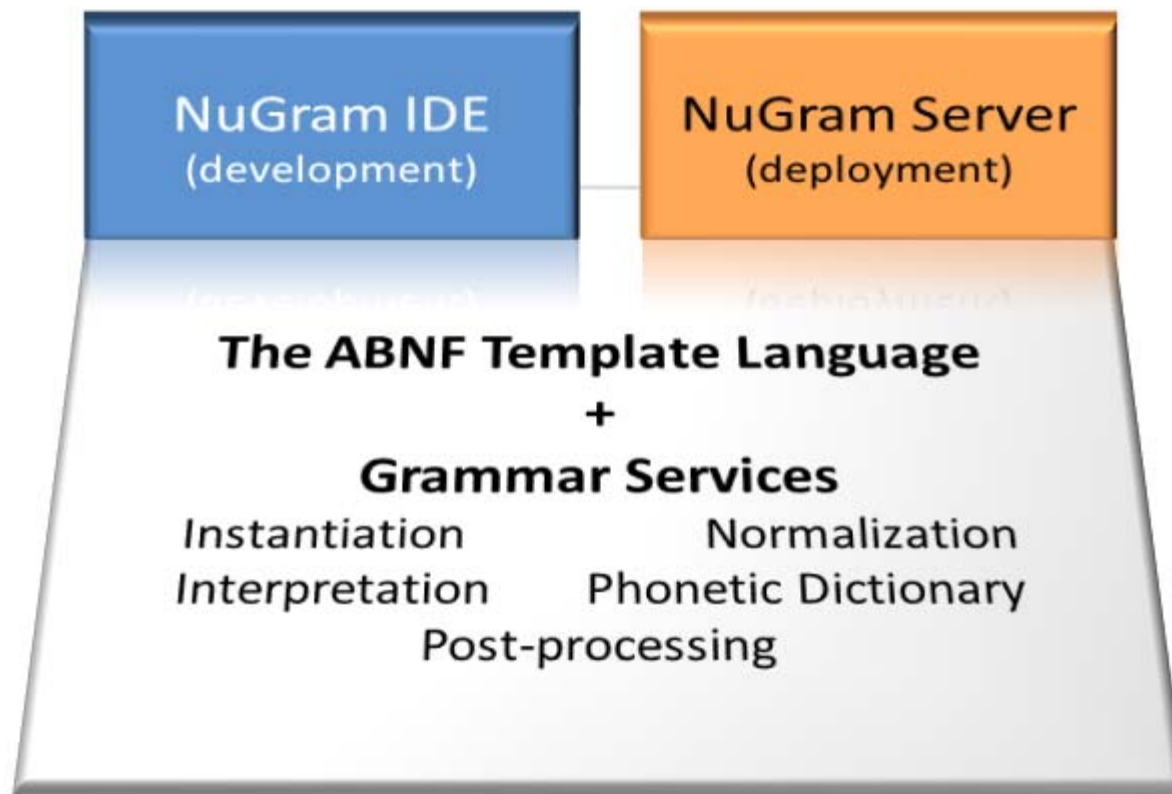


## A complete grammar solution should:

- Provide a sophisticated Grammar IDE
  - *Full-featured editor*
  - *Automated coverage and semantic interpretation testing*
  - *Powerful analysis, visualization, and debugging tools*
- Be recognition engine agnostic
- Support static ***and*** dynamic grammars
  - *Separate grammar development from application development*
  - *Let grammar developers manage all grammars in an application*
- Be easy easy to integrate with any speech application
- Support text as well as speech applications
  - *Multi-channel applications*
  - *Test speech applications with text input*
- Provide a platform for packaging advanced grammar features
  - *Data normalization*
  - *Confidence score rescoring*
  - *Robust parsing & Topic classification*



# Nu Echo – NuGram Platform



The first complete grammar solution





# Nu Echo – NuGram Roadmap



- NuGram 2.0 Beta
  - Launched at SpeechTEK 2008
  - Free, time-limited version of NuGram IDE
  - Hosted NuGram Server (technology preview)  
<http://www.grammarserver.com>
- NuGram 2.0 GA
  - Q1 2009
  - NuGram IDE Basic Edition + Professional Edition
  - Java-based NuGram Server (Servlet + Embedded API)
- NuGram 2.x
  - Extension points for tighter integration with SCEs (e.g. VoiceObjects Desktop)
  - Support for phonetic dictionaries, post-processing, and normalization APIs
- NuGram 3.0
  - Full support for SLMs, robust parsing, call routing
  - Tuning tools



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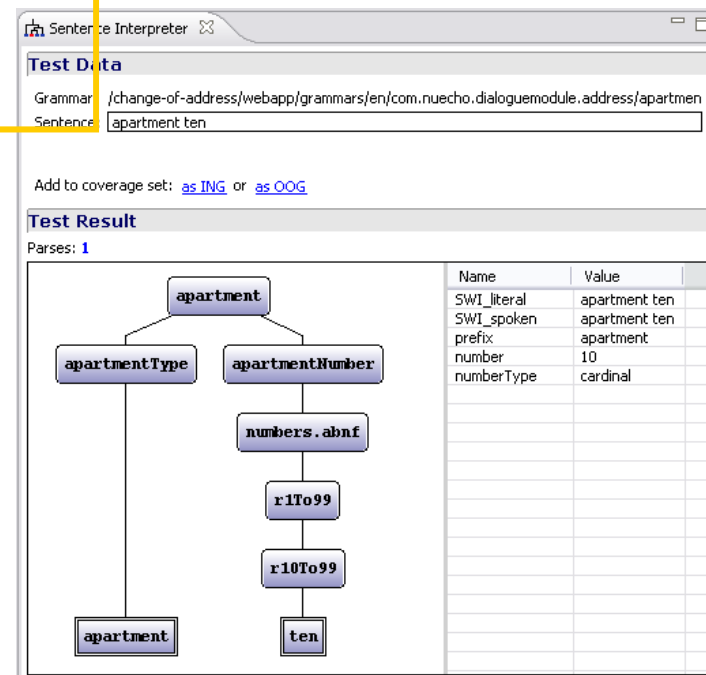
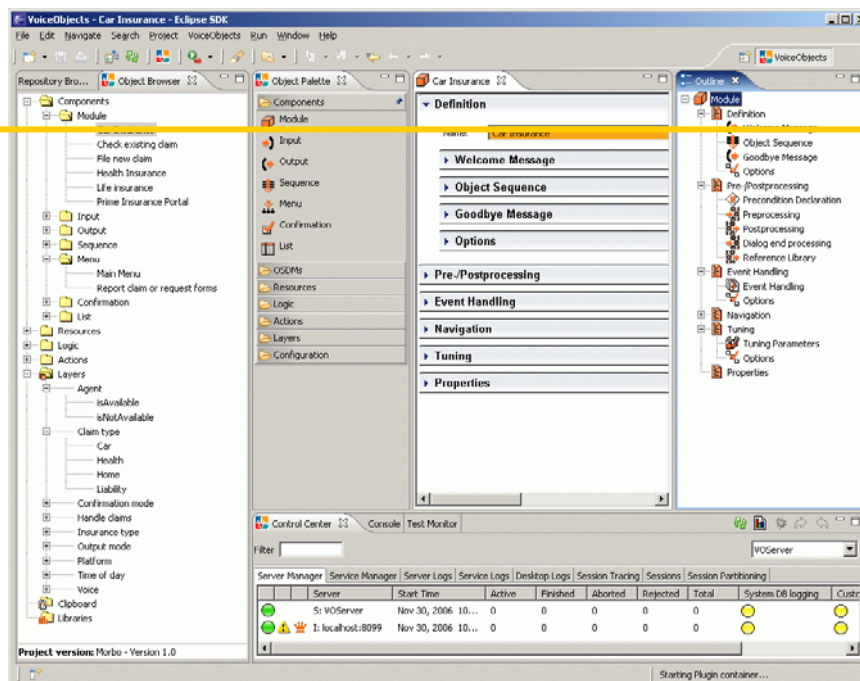




# VoiceObjects Desktop + NuGram IDE



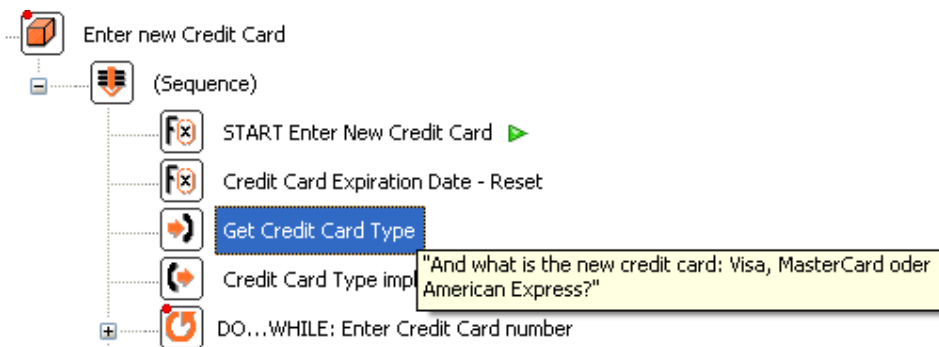
# Live Demo



VoiceObjects Desktop + NuGram IDE



# Use Case – Credit Card Type



***"It's a Mastercard."***

***"I have a Visa."***

***"Amex."***

***"The new card is American Express."***

```

<?xml version="1.0" encoding="ISO-8859-1"?>

<grammar version="1.0"
  xmlns="http://www.w3.org/2001/06/grammar"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.w3.org/2001/06/grammar
    http://www.w3.org/TR/speech-grammar/grammar.xsd"
  xml:lang="en-US"
  mode="voice"
  tag-format="semantics/1.0"
  root="CreditCardType">

- <rule id="CreditCardType" scope="public">
  <item><item repeat="0-1"><ruleref uri="#Prefix"/></item><ruleref uri="#Type"/><item repeat="0-1">please </item><tag>out.sltType = rules.Type
</tag></item>
</rule>

- <rule id="Prefix" scope="private">
  <one-of><item>I got </item><item>I've got </item><item>I have </item><item>I own </item><item>it is </item><item>its </item><item>
thats </item><item>this is </item><item><one-of><item>my </item><item>
the </item></one-of><item repeat="0-1">new </item><item repeat="0-1">
credit </item>card is </item></one-of>
</rule>

- <rule id="Type" scope="private">
  <one-of><item><item repeat="0-1"><one-of><item>a </item><item>the </item></one-of></item>visa <item repeat="0-1">card </item><tag>out =
'Visa'</tag></item><item><item repeat="0-1"><one-of><item>a </item><item>
the </item></one-of></item>master card <tag>out = 'MC'
</tag></item><item><item repeat="0-1"><one-of><item>an </item><item>the </item></one-of></item><one-of><item><one-of><item>amex </item><item>american express
</item></one-of><item repeat="0-1">card </item><tag>out = 'AmEx'
</tag></item></one-of>
</rule>

</grammar>

```



# NuGram Platform - Download Site



NuGram Hosted Server (Beta)

[login](#) | [register](#) | [downloads](#) | [blog](#)



<http://www.grammarserver.com/>

[Home](#) > [Welcome - NuGram Hosted Server](#)

## Welcome to the NuGram Hosted Server

NuGram Hosted Server is a hosted service for the development and deployment of dynamic and static speech recognition grammars. It is a hosted version of NuGram Server, offered to the community completely free of charge.

Before using NuGram Hosted Server for your own personal use, make sure to review the [Terms of Service](#).

## Downloads

- » [NuGram IDE](#)
- » [NuGram Server runtime APIs](#)

## Documentation

- » [Getting started with the NuGram platform](#)
- » [Software and hardware requirements](#)
- » [Release notes](#) » [FAQ](#) » [Support](#)

## NuGram IDE

- » [Installation instructions](#) » [Documentation](#)

## Grammar Language

- » [Tutorial](#) » [Reference manual](#)

## NuGram Server

- » [Reference guide](#) » [Runtime APIs](#)

## Speech Grammars

Browse through the public collection of speech recognition grammars hosted on the NuGram Server or manage your own.

- » [All public grammars](#) » [Your grammars](#)

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Sentence Interpreter

**Test Data**

Grammar: /change-of-address/webapp/grammars/en/com.nuecho.dialoguemodule.address/apartmen  
 Sentence: apartment ten

Add to coverage set: [as ING](#) or [as OOG](#)

**Test Result**

Parses: 1

Name	Value
SWI_literal	apartment ten
SWI_spoken	apartment ten
prefix	apartment
number	10
numberType	cardinal



# Announcements

- Presentation will be available at <http://developers.VoiceObjects.com/>
- Next Developer Jam Session



## ***Multi-language Self-Service***

- Best practices for designing and deploying multi-lingual dialogs
  - *Multi-language VUI design best practices*
  - *Development and deployment strategies*
  - *Adding and maintaining language layers*
  - *Audio formatting with dynamic data*
- Date: *Wednesday, October 8, 2008*
- Time: *8am PDT, 11am EDT, 5pm CEDT*
- Duration: *1 hour*



Thank You!



# Questions & Answers





VoiceObjects

# End of This Session



Thanks for attending VoiceObjects'  
**Developer Jam Session**



<http://developers.VoiceObjects.com/>  
Replay sessions & download presented content