AT&T'S YANG MODEL DESIGN STUDIO

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Lead Member Of Technical Staff

Domain 2.0 Architecture & Design

AT&T Labs

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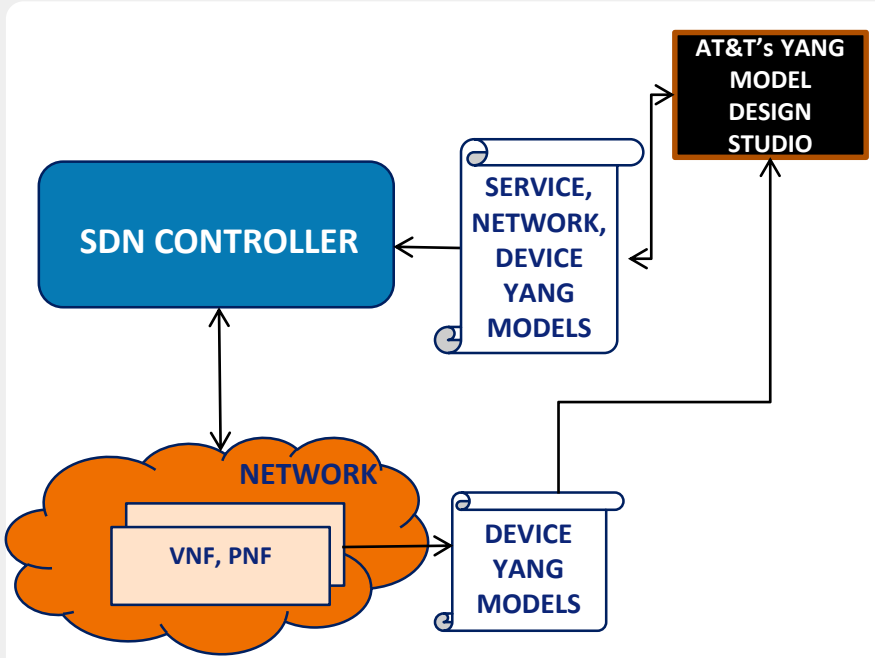
AT&T's YANG DESIGN STUDIO

AT&T's YANG Model Design Studio is a home-grown tool that helps build, edit, render and manage YANG models

[Developers: Kevin D'Souza, Jonathan Pang]



VNF: Virtual Network Function
PNF: Physical Network Function

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AT&T'S YANG DESIGN STUDIO

Software Solution Space:

1. Eclipse and related plugins
2. XText
3. Python
4. Pyang
5. GraphViz/Dot
6. plantuml.jar
7. JAVA
8. Etc.

Highlights include:

- YANG model management
- Validating standards compliance
- Visual editing features
- Rendering YANG models in multiple formats
- Platform independent tool
- Observed reduction in YANG development time by > 50%

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SCREEN CAPTURE SAMPLES

1. Main Screen with ATT-YANG Design Studio Menu Option
   - Project Explorer
   - YANG Model Presentation
   - Model Outline
   - Console
2. Rendered Output (subset):
   - Tree
   - .png

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YANG MODEL AS A TEXT FILE (NO DESIGN STUDIO)

```
//<CODE BEGINS> file "module-test.yang"
module module-test {
 namespace "http://com/att/test/module-test";
 prefix module-test;

 organization
  "AT&T Labs, Inc.";

 contact
  "Kevin D'Souza";

 description
  "YANG Module used to validate ATT-YANG IDE functionality";

 revision 2014-11-05 {
  description   "Initial Revision";
 }

 grouping grouping-test1 {
  container group-test1-container {
    leaf group-test1-leaf {
      type enumeration {
        enum 1;
        enum 2;
      }
    }
    list group-test1-list {
      key list-test-key1;
      leaf list-test-key1 { type uint8; }
    }
  }
 }
```

```
grouping grouping-test2 {
  choice group-test2-choice {
   container group-test2-choice1 {
      leaf group-test2-leaf1 {
        type string;
        default "test2";
        mandatory false;
      }
    }

   container group-test2-choice2 {
     leaf group-test2-leaf2 {
        type string;
     }
    }
  }
}
```

```
container  use-container {
  container use-test1 {
    leaf use-test1-leaf {
      description "use-test1 container";
      type string;
    }
   uses grouping-test1;

   container hierarchy-test1 {
     leaf second-level-hierarchy {
       type string;
     }
    }
  }

  leaf use-container-leaf {
   type int32;
   mandatory true;
  }

  uses grouping-test2;

  leaf end-test {
   type string;
  }
 }
}//<CODE ENDS>
```


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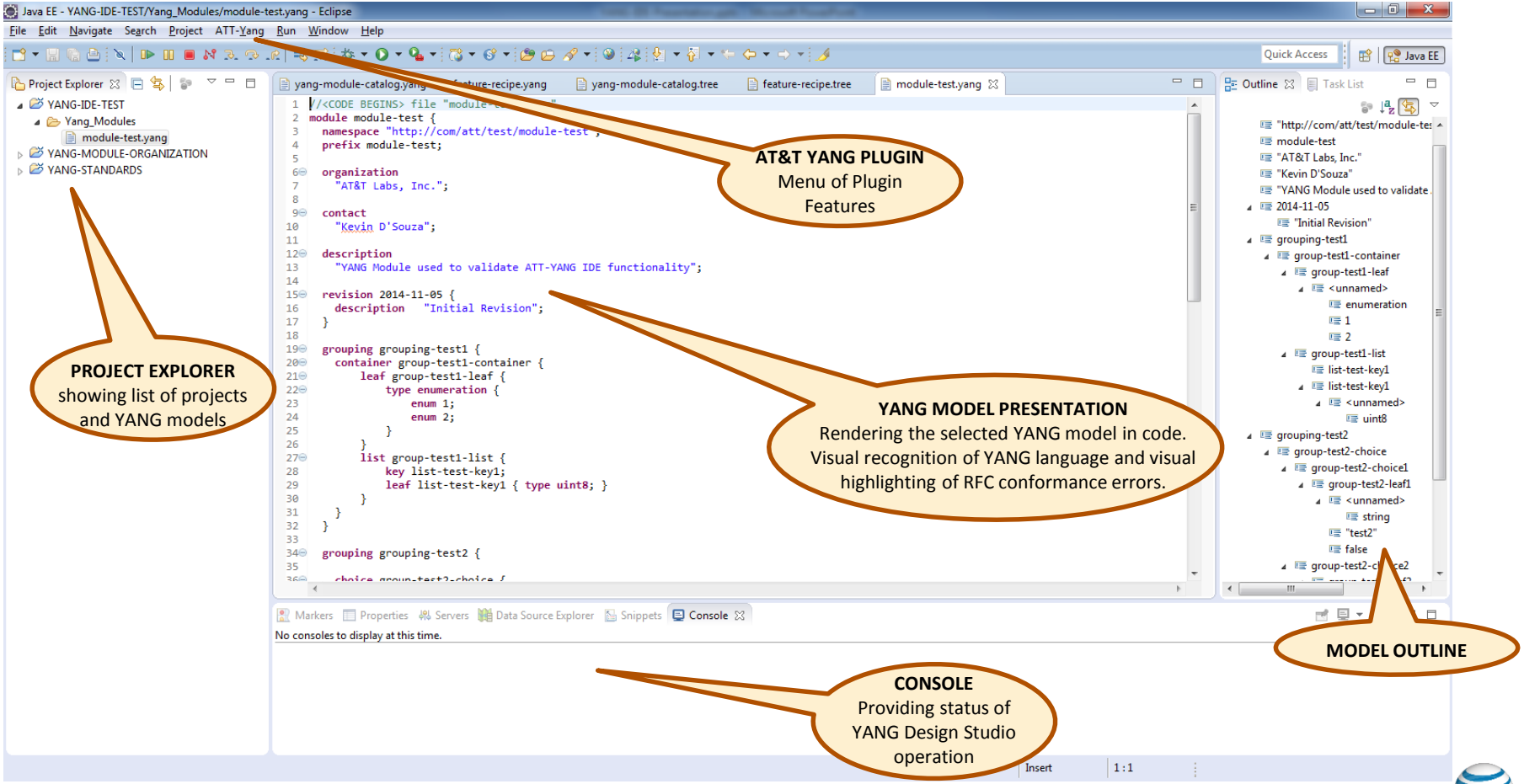

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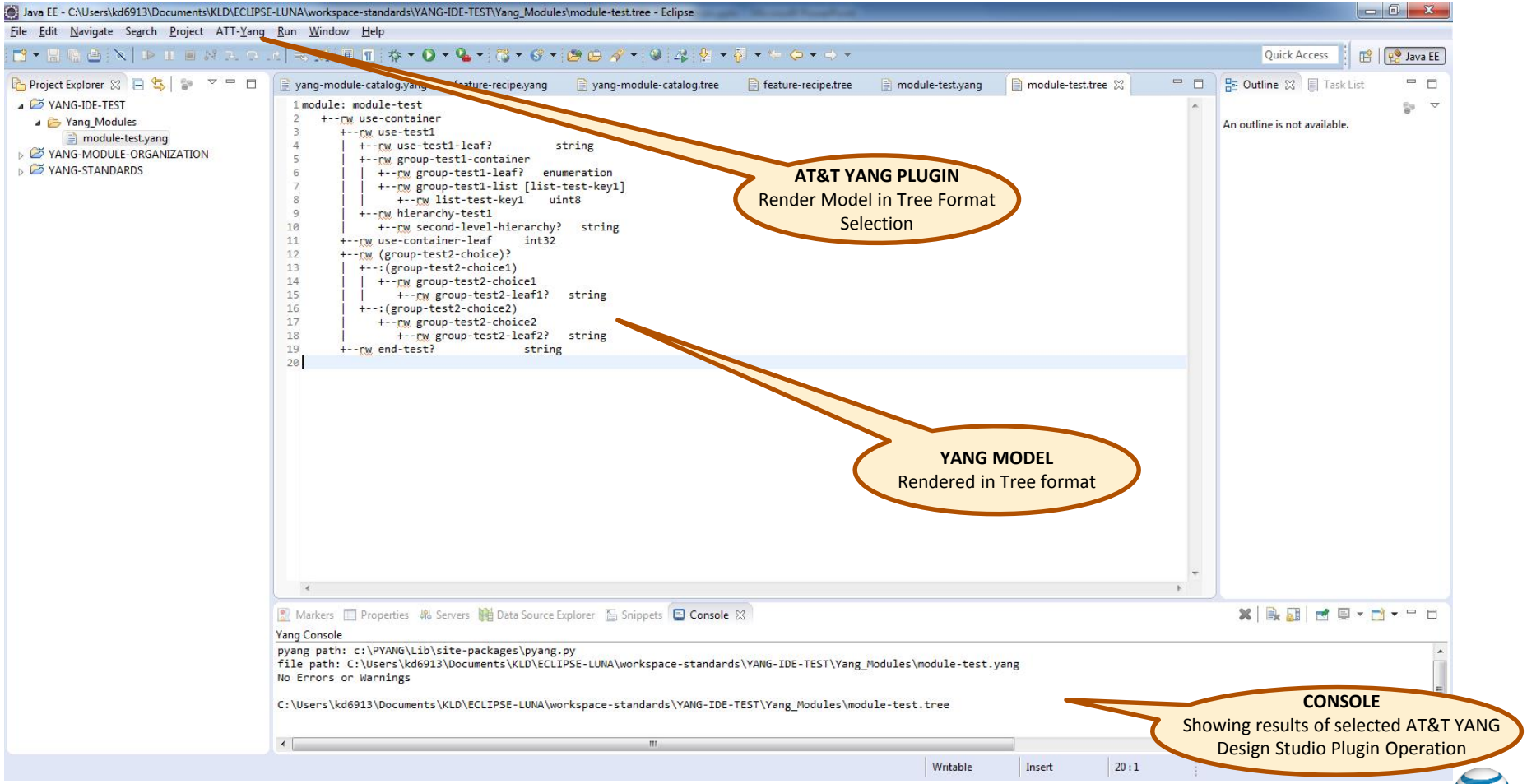

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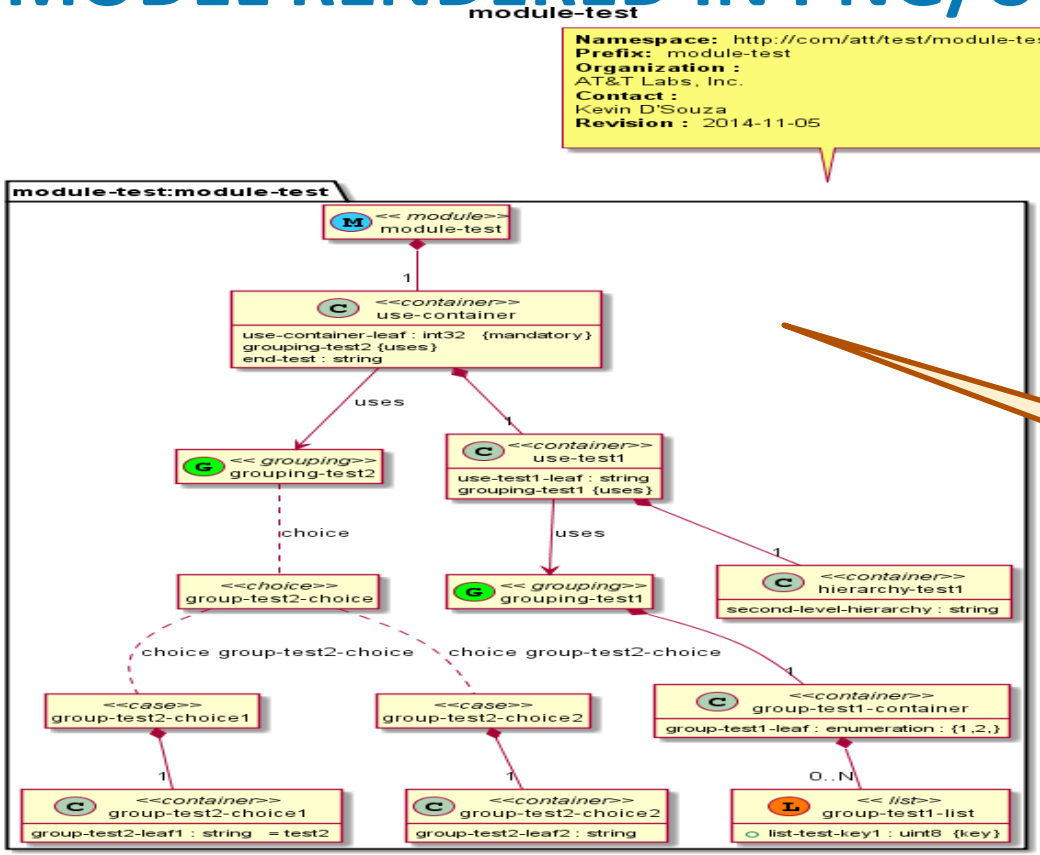
YANG MODEL RENDERED IN PNG/UML



YANG MODEL
Rendered in PNG/UML format using AT&T YANG IDE Plugin

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PROPOSED CODE DISTRIBUTION

- Proposal is to distribute the AT&T YANG Model Design Studio Code under the Eclipse Public License Version 1.0
  - http://opensource.org/licenses/eclipse-1.0.txt
- Proposed distribution to include:
  - Source code for Eclipse Plugin
  - Plugin Dependencies Installation guide
  - Plugin Installation guide
  - User Guide
  - Other stuff TBD

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AT&T YANG DESIGN STUDIO TOOL DEMO

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SUMMARY - AT&T's YANG DESIGN STUDIO

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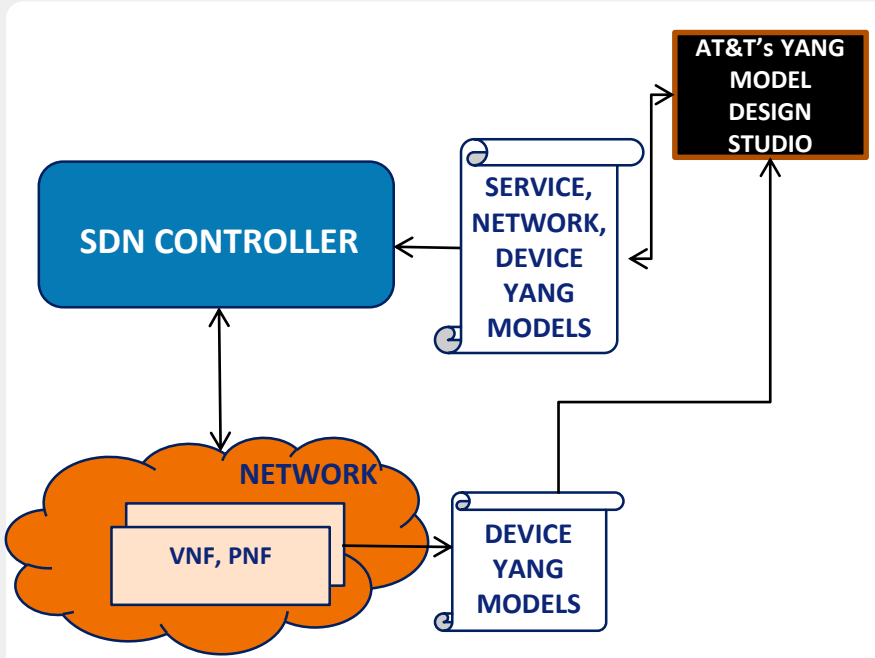

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