MyExperiment – An Online Repository for PrimoGENI Experiments

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What's MyExperiment?

MyExperiment is a public repository of network models for PrimoGENI:

- PrimoGENI allows hybrid network experiments consisted of simulated and emulated network entities

- Each PrimoGENI experiment consists of a model of a virtual network, which includes the specification of the network topology with detailed configuration of network entities, and possible specification of background network traffic

- MyExperiment is an online repository, where experimenters can create, view, and modify network models; one can also publish network models and share experiment results with the user community

- MyExperiment contains plugins for various network topology and traffic generators (such as BRITE, GT-ITM, and FNSS); there are also existing network topologies (synthetic and real ones, such as RocketFuel ISP networks) and traffic matrices

- MyExperiment manages network models created by each user and supports translation between different formats

- Users can publish their models and share experiment results to facilitate model reuse and validation

We present here only a prototype with partial implementation. A full version of MyExperiment is expected to be released at GEC22 (March 2015). Please stay tuned!

MyExperiment Workflow
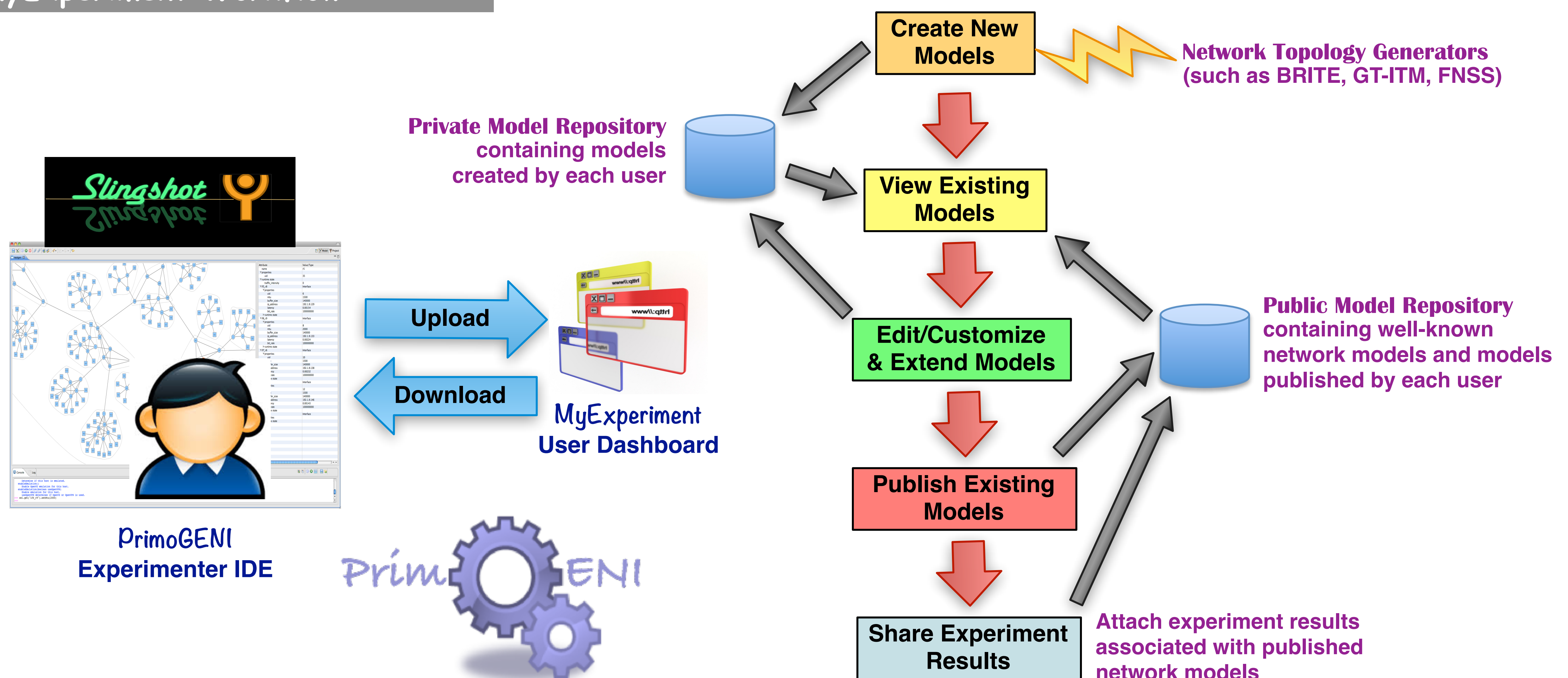
System Design Overview

- **MyExperiment system contains three major modules:**
  - ✓ **A web interface** providing dynamic and feature-rich experience to GENI users for creating, managing, and sharing network models
  - ✓ **A model creation system** containing plugins for popular model generators (such as the Fast Network Simulation Setup or FNSS)
  - ✓ **A database system** for managing model repositories (including both public and user-private ones)

- **Our current prototype includes:**
  - ✓ User dashboard organizing workflow (model creation, viewing, editing, publishing, …)
  - ✓ Simple model creation (synthetic topologies, such as linear, dumbbell, ring, star, …)
  - ✓ Functions for graphically viewing and downloading models in various formats

- **Expected major functions to be included in the full version:**
  - ✓ Federated sign-on for GENI users
  - ✓ Incorporation of popular model generators (such as FNSS, BRITE, …)
  - ✓ Sharing and forking public models, and publishing experiment results

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