



Election Modeling Updates

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May 27, 2020

[View the Models!](https://bit.ly/2IgKsmv)

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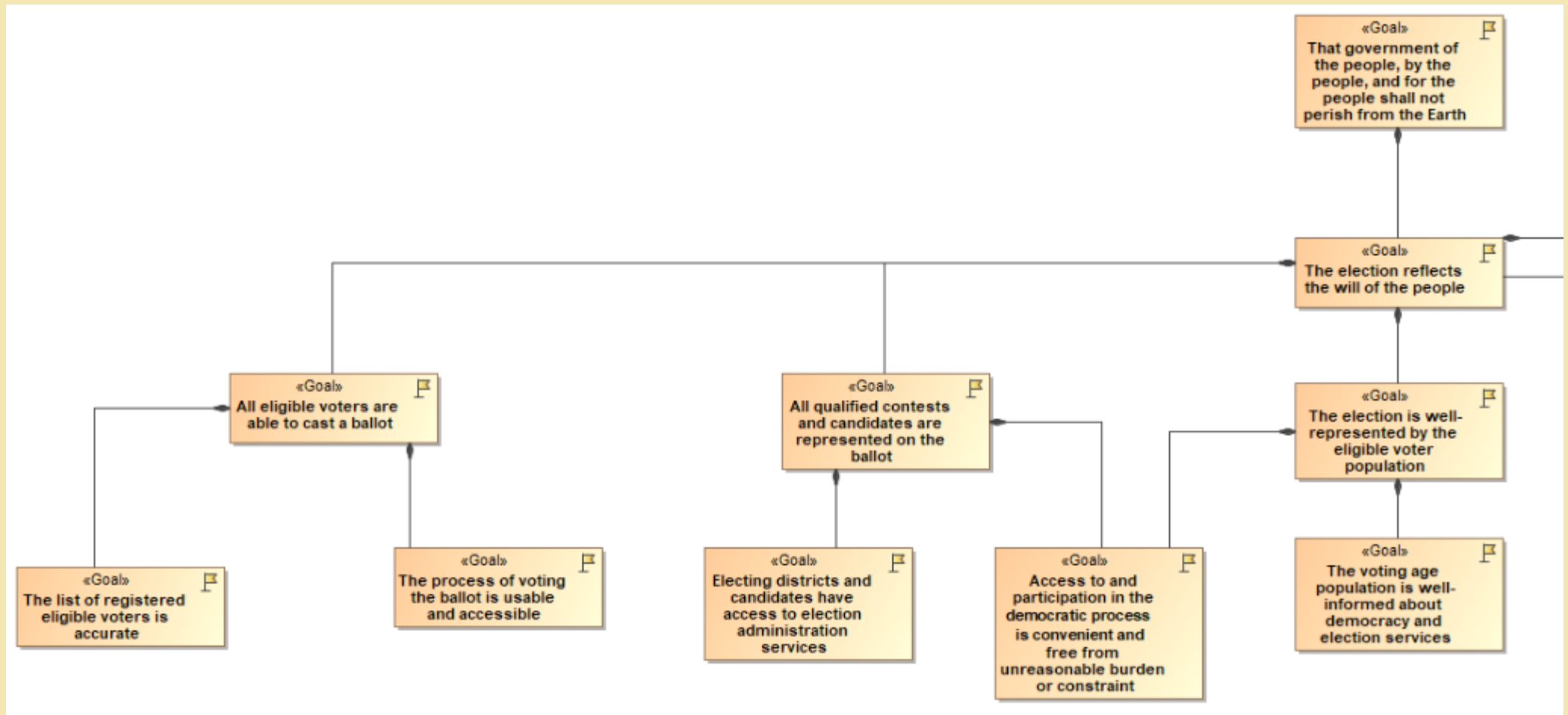
Purpose of Election Modeling

“The purpose of election modeling is to establish an **implementation-independent** baseline understanding of election **data**, **its inter-relatedness** and minimum required attributes. The model is based on a high level but comprehensive understanding of the **processes** that are common to elections. The model provided establishes **common terminology** that contributes to a more **formal glossary** and serves as a tool for the development of other election-related standards.” - IEEE P1622.4 PAR

What is the Election Model?

- A set of different products to answer different questions
 - Process Models (How)
 - Semantic Model / Glossary (What)
 - Organization Model (Who)
 - Business Motivation Model (Why)

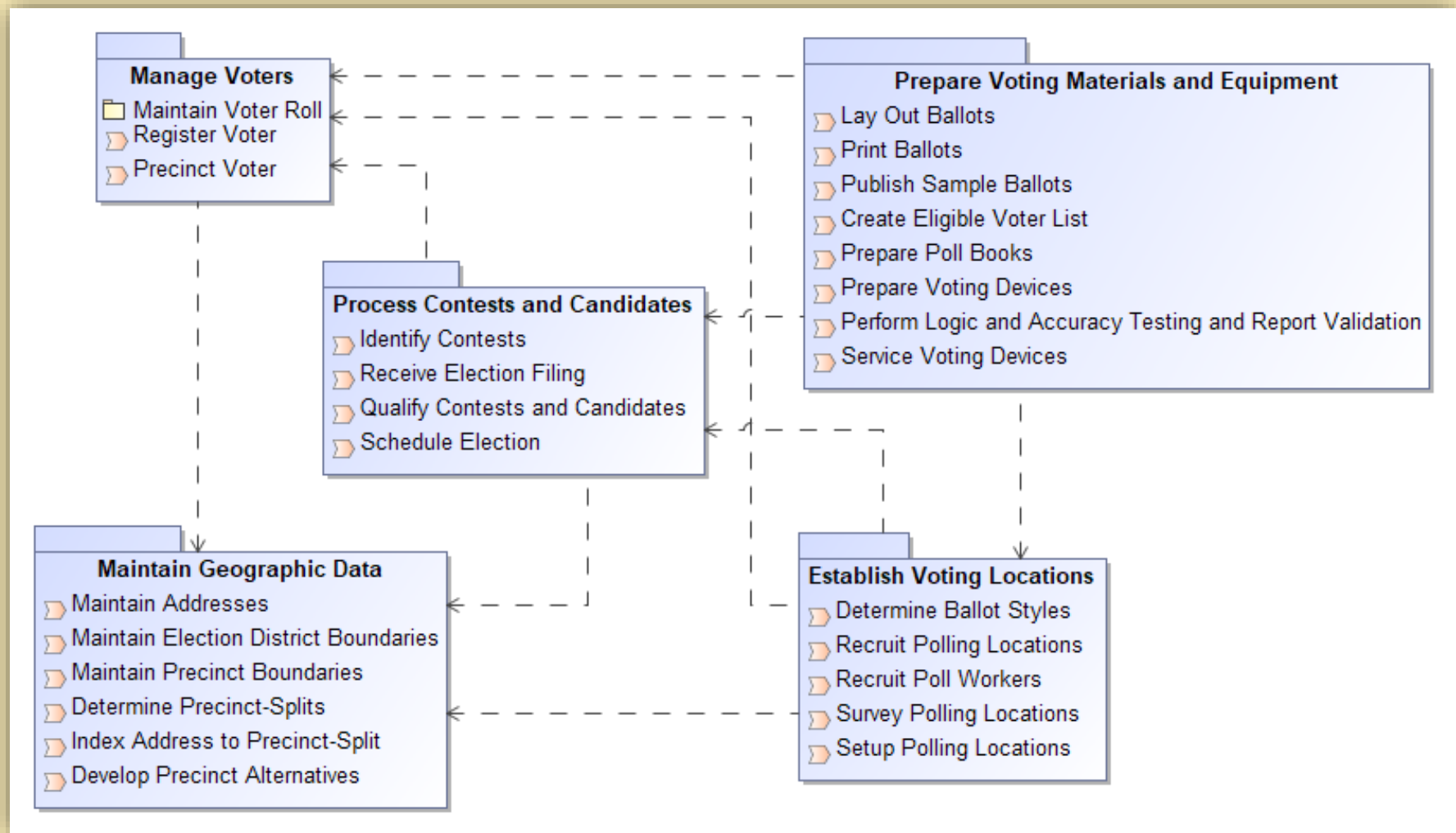
Goal Hierarchy



What is the Process Model (Catalog)

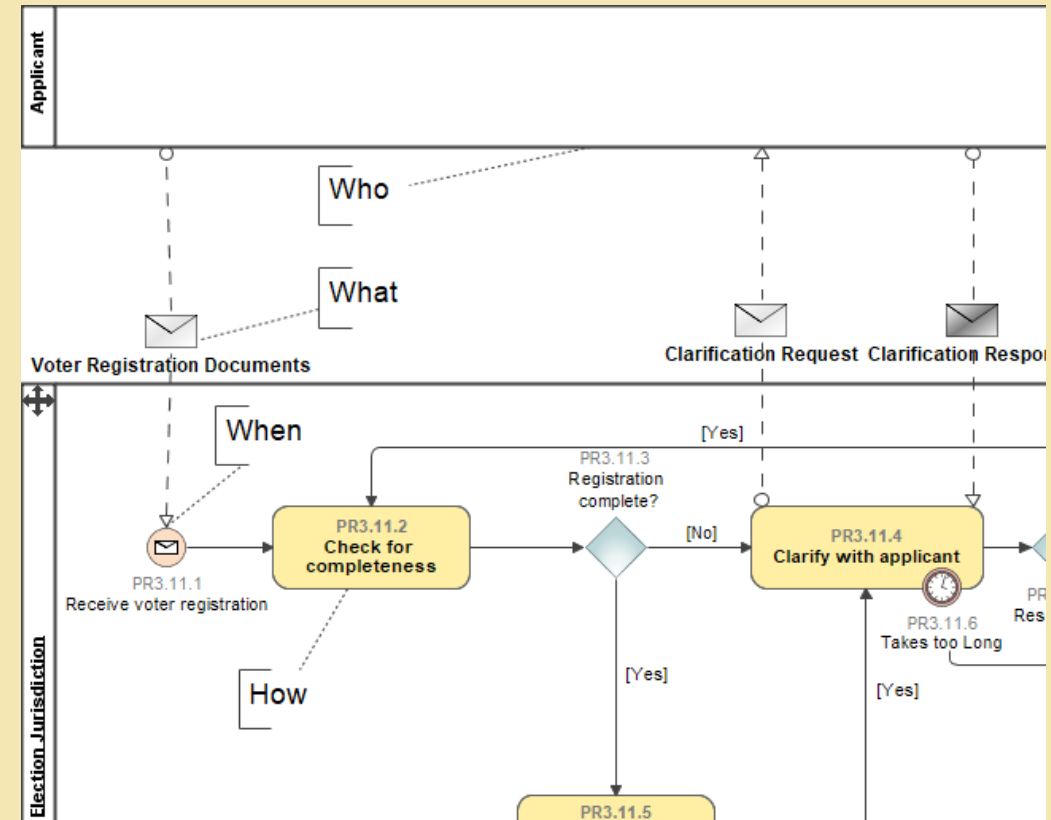
- Catalog of 50+ Identified Process in 12+ Functional Areas
- Functional Areas Include
 - Manage Voters
 - Prepare Voting Materials and Equipment
 - Vote Remotely
 - Vote In Person
 - Determine Election Results

What is the Process Model (Catalog)



What is the Process Model

- Each process is diagrammed using Business Process Modeling Notation
- Individual tasks in each process are described in natural language



[View the Models!](https://bit.ly/2IgKsmv)

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A little history...

- Work Began in 2014 (under IEEE P1622.4)
 - Chaired by Kenneth Bennett, LA County
 - Literature Review
 - Goal Hierarchy
 - Identify High Level Processes and Relationships (Scope)
 - Elaboration of Processes
- 2015-2016
 - Moved to NIST-EAC Public Working Groups
 - Work continues

A little history...

- 2017
 - 21 processes described
 - Democracy Fund contracts Katy Owens-Hubler and John Dziurlaj to support model and glossary development.
 - John Dziurlaj becomes chair
 - Held in person workshop
 - Began work on Semantic Model, Glossary

A little history...

- 2018
 - 46 processes described
 - June, workbook released
 - Work continues on semantic model, glossary
 - Work on semantics of ballots
 - Ballot Structure
 - Marks
- 2019
 - Finish up Glossary work (**302 terms!**)
 - Group goes dormant second half of year

Now...

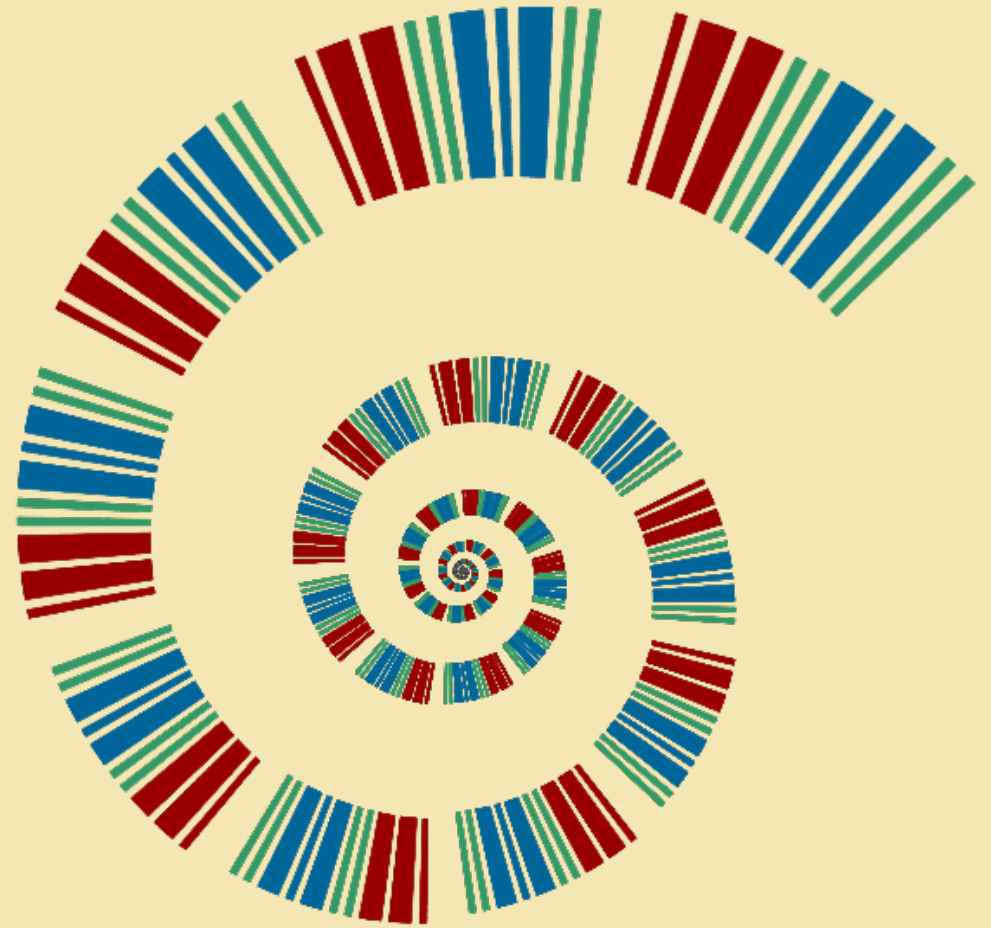
- 2020
 - Reviewed new feedback on glossary
 - ...

Business Modeling (Status)

- Process Catalog
 - List of Processes (Scope) - **Complete**
- Process Model
 - Elaboration of Processes – **Complete**
- Business Motivation Model
 - List of policies derived from law – **65% Complete**
- Organizational Structure Model
 - Minor Model; Describes Organizational Roles – **80%**

Glossary, Semantic Model (Status)

- Glossary
 - Glossary focus was originally more broad
 - Time constraints meant focus was narrowed to VVSG
- Semantic Model
 - Meant to guide the glossary development
 - Focused on terms requiring precise definitions



Major Work Products

- Business Model
 - America's Election Model: The Architecture of Elections (released June 2018)
 - Online model viewer
 - BPMN/XPD L Exports Available
- Glossary
 - VVSG 2.0 Requirements Glossary (in public review)
 - NIST Election Glossary (online version)
- Semantic Model
 - Web viewer, Web Ontology Language (OWL/RDF)

What's left?

- Glossary
 - Expand to other, non-VVSG areas of elections?
- Semantic Model
 - Complete ballot semantics work?
- Business model
 - Complete motivation model?
 - "Publish" the models?
- Other ideas??