SBOL Visual 2.0 update

Jacob Beal *(on behalf of the SBOLv community)*

September, 2016

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BBN Technologies

SBOL Visual 1.0:

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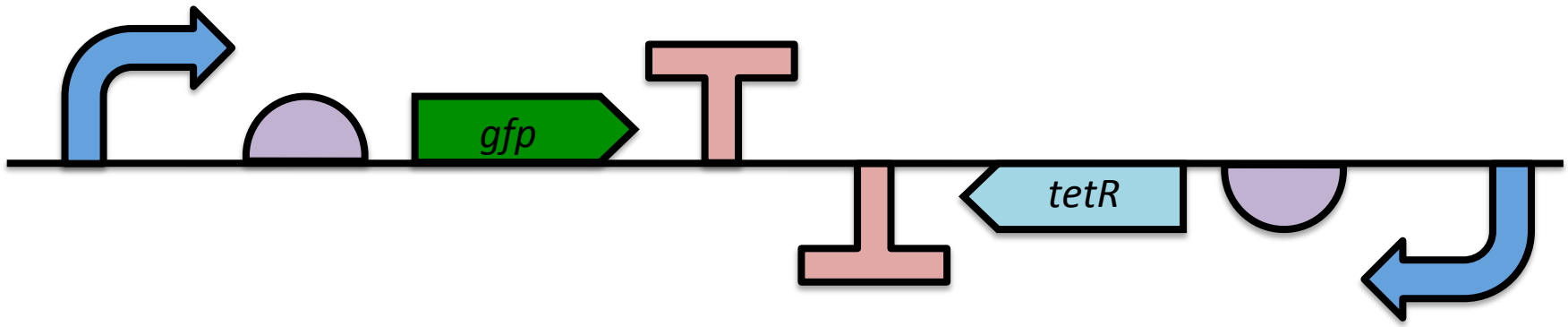

Synthetic Biology Open Language - Visual
Community standards in development since 2008
SBOL Visual 1.0: BBF RFC #93 doi: 1721.1/78249

Drivers for SBOL 2.0

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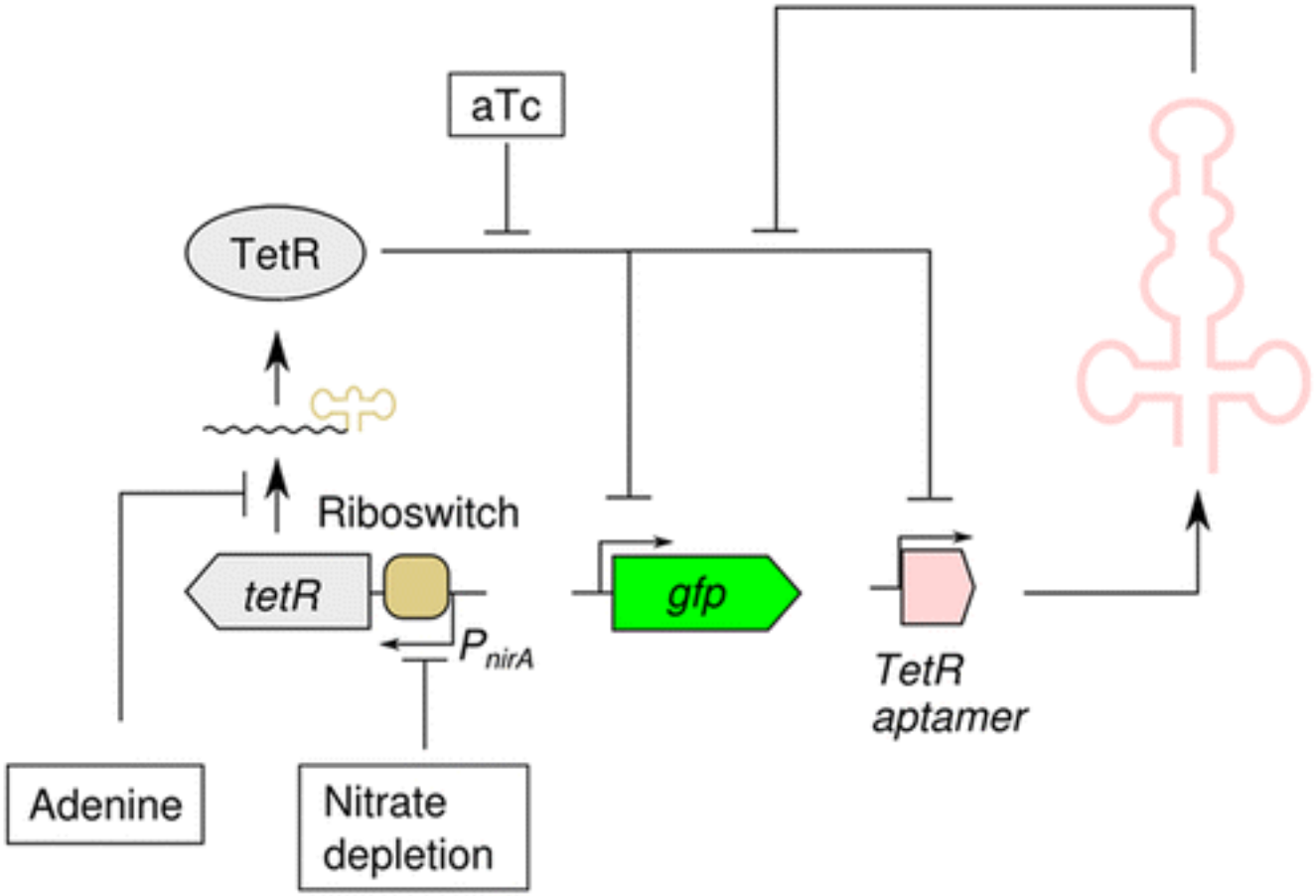
There's a lot more to talk about in genetic designs:



Example from: Higo et al, "Designing Synthetic Flexible Gene Regulation Networks Using RNA Devices in Cyanobacteria," ACS Synthetic Biology, online September, 2016

SBOL Visual 2.0 (draft)

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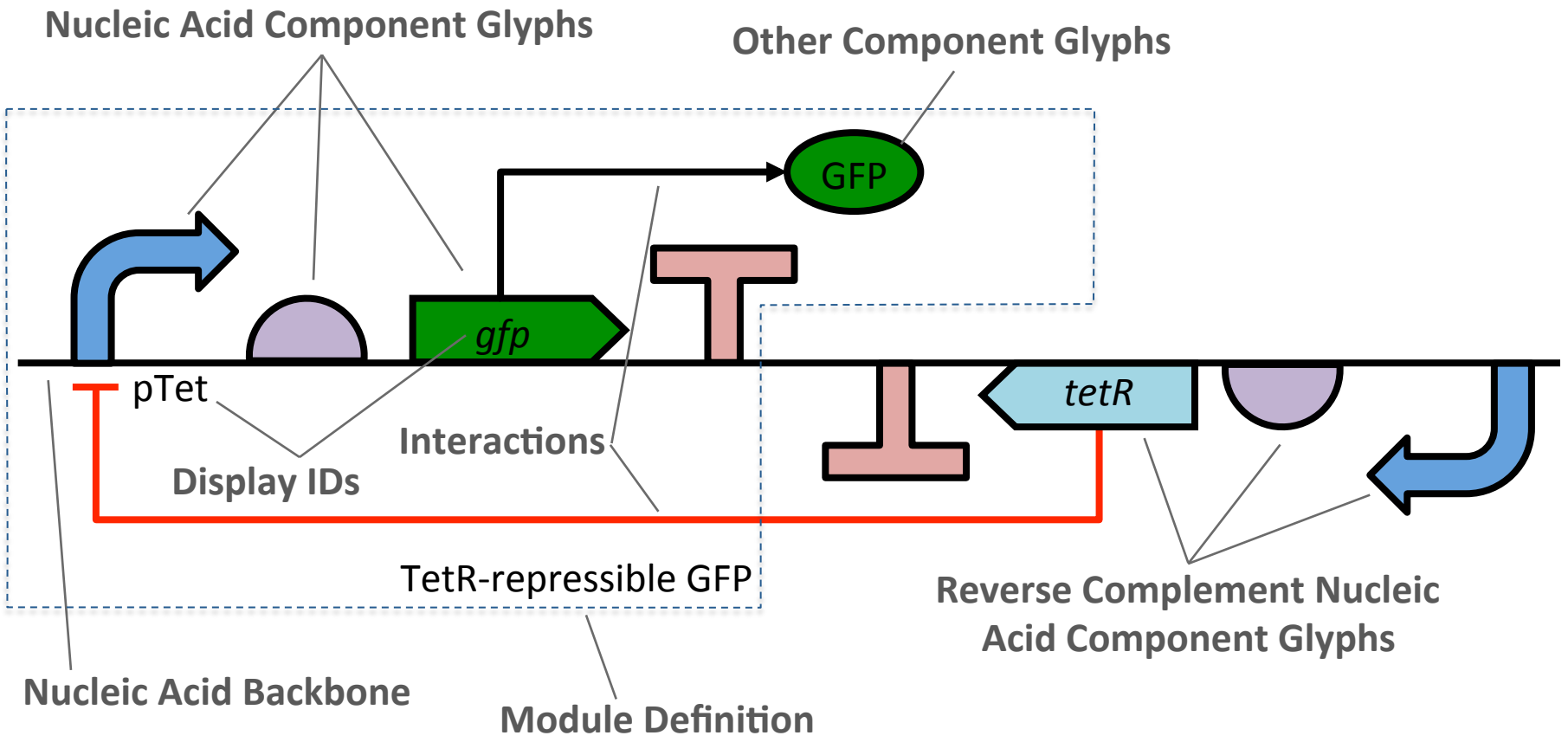

Draft: https://github.com/SynBioDex/SBOL-visual

Requirements for Glyphs

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- Defined by ontology (preferably SO / SBO)
- Easy to sketch by hand
- Only solid black lines: user has free choice on color, dash style, fill, scaling, styling, and text
- Difficult to confuse when hand-sketched, scaled
- Vertically and horizontally asymmetric
- Clear interior/exterior distinction for closed paths

Challenges

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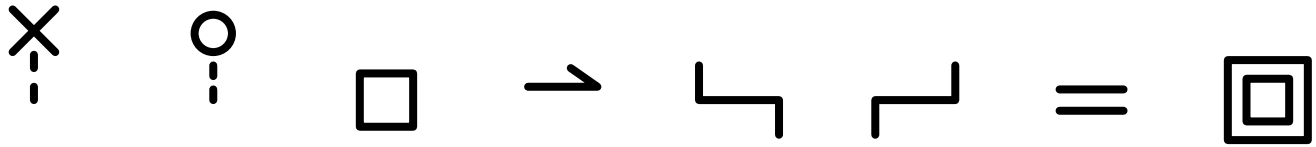
- Conflicting principles
  - Maintain graphical design requirements
  - Cover all major features in SBOL 2.x data standard
  - Maintain compatibility with SBGN (probably AF)

- Problem glyphs



- Adding glyphs
  - Lots of proposal; hash out now or save for 2.1?

Where we stand today:

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- Glyph requirements: rough consensus
- Single/double strand: rough consensus
- Glyph variants: rough consensus
- Interactions: rough consensus on stimulation, inhibition, regulation; question whether stimulation needs to be split into production vs. regulation, how to interpret multi-head/tail interactions, representation of reactions
- Modules: rough consensus on module, mappings; not yet on ports & cross-module interactions
- Non-DNA components: rough consensus on generic, not yet on anything else
- Labels, annotations: rough consensus