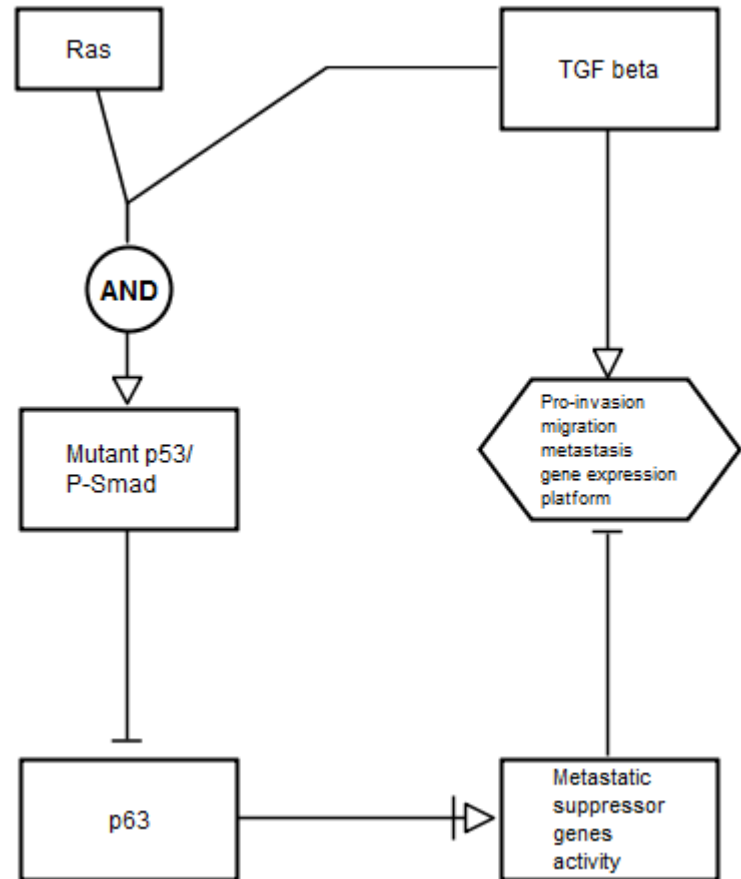


SBGN AF Development

Activity Flow

- Conceptual
- Sequential
- Non-mechanistic
- Ambiguous
- Logical modelling
- Signalling pathways, gene regulatory networks, but also Abstraction



Activity Flow

Is AF

- simple enough
(easy to use)

or

- not used?

FAQS

The Frequently Asked Questions section provides answers to some frequently asked questions about SBGN.



[Frequently asked questions about PD Level 1](#)



[Frequently asked questions about ER Level 1](#)

The following questions are general and not specific to a particular SBGN language.

Which software supports SBGN?

It is difficult to keep track of SBGN support in the various relevant software tools. However we try to gather the information we have on a [single page](#).

Systems Biology Graphical Notation

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SBGN AF L1

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#	Summary	Milestone	Status	Owner	Created	Updated	
1	AF example TGFbeta signaling pathway error	None	open		2010-04-26	2010-04-26	

AF Node (Biological Activity)



Figure 2.2: *The Activity Flow glyph for biological activity.*

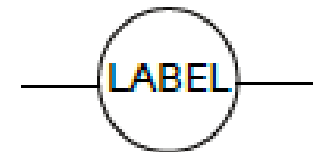
A



B



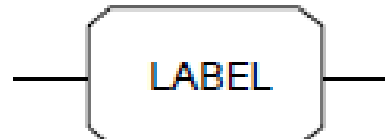
C



D



E



F



Figure 2.6: *The Activity Flow glyph for unit of information.*

AF Node (Biological Activity)



Figure 2.7: *Examples of unit of information used on biological activity node to indicate that the Twist-1 activity is from a nucleic acid feature or a macromolecule, or a transcription factor activity from an unspecified entity.*

AF Phenotype

AF PHENOTYPE

AF phenotype glyph survey

In SBGN Activity Flow, *phenotype* and *perturbation* are both activity nodes, and are represented by glyphs identical to those of *perturbing agent* and *phenotype* in PD, respectively. The syntax of both glyphs is identical to that in PD also, i.e., *perturbation* can only be the source of an influence arc, and *phenotype* can only be the target.

There are two issues related to this.

1. In PD, *perturbing agent* is an EPN, while *phenotype* is a process node, while in AF, both *perturbation* and *phenotype* are activity nodes (processes). Using the same glyph for two semantically different concept is confusing.
2. In AF, sometime a *phenotype* can be a source of the different arc, for example, Na channel activity -> membrane depolarization -> K channel activity -> membrane repolarization. The current AF syntax makes it difficult to represent such pathways.

The topic was discussed at the HARMONY in April, and a few solutions have been suggested, which are summarized below.

A. Solution for the glyph of *perturbation*

Remove *perturbation* as an activity node. Instead, use it as a decoration of an activity node like *macromolecule* or *nucleic acid feature*.

Examples: the [glyph](#), [PPAR pathway](#).

AF Phenotype

Results of the voting.

1 vote - proposal 1

1 vote - proposal 2

0 vote - proposal 3

0 vote - proposal 4

3 votes - proposal 5

2 votes - proposal 6

No decision was made. Need further discussion.

AF Phenotype

- HARMONY 2012 - decision about how to deal with phenotype, no objections on mailing list



The Activity Flow glyph for biological activity - phenotype

Next Steps

- Finalize spec
(current version
does not reflect
latest decisions)
- Vote about new
version (new
level ?) of
SBGN AF

Systems Biology Graphical Notation: Activity Flow language Level 1

Version 1.1

Date: March 8, 2012

Disclaimer: This is a working draft of the SBGN Activity Flow Level 1
Version 1.1 specification. It is not a normative document.

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