Depiction 101: Interaction Rules Outline

This session will cover:

- **What** interactions are and **how** they work

- How to **create, use, delete and share** your own.

For **more information** on simulation and interactions, see Section 7.4 of the Depiction User Manual - Version 1.3.2.

Interaction Rules are:

- Links between elements with behaviors and/or data to simulate real world events.
- Causes and Affects. (Explosion affects Routes & Person element)

Key concepts

- **Zone of Influence (ZOI)**: this is the area surrounding an element that will affect or influence other elements that come in contact with it (like the red circle around an Explosion, or the line of a Route - road network).
- **Behaviors**: these are defined things that an element will do when affected by another (like the red X that appears on a Person when an Explosion intersects it, or the way a Route - Road network changes to go around a Road barrier).

Note: A Road barrier does not directly affect a Route-Road Network, it disables the underlying Road Network (though the effect is shown on the Route). This enables the interaction to be as simple as possible and to affect multiple elements. A good example of this is that there is a single interaction that causes a Route to be changed when the Road Network is affected, but multiple interactions designating specific elements that can affect the Road Network (Road Barrier, Explosion and Water Over Roadway, for example).

To **view** and **change** Interaction rules:

- Click **Tools** on the menu bar
- Click **Interactions** and you will see our default list of interactions.
- Note: This window and its sections are re-sizable, so you can adjust is as needed to make it easier for you to use.
- The **top pane** shows the list of Interaction Rules available.
  - o Red text signifies default rules (cannot be edited); black text signifies a user-created rule
  - o A green dot next to the rule means it is active; a red dot means inactive: use the check box in the upper right to change this
- Click on a rule to view the details of it in the **bottom section**:
  - o **Cause** allows you to choose the element that affects others: this cannot be changed in the default rules
  - o **Affected elements** are those that will be affected, in alphabetical order (including any add-on elements and/or user created elements). Again, these cannot be changed in the default rules.

From the Interactions menu, you can create your own rules by using the **Copy Interaction** button.

For this demonstration, we'll select the "Explosion disables all people-type elements" (note: explosions do not affect buildings by default)

- Click Copy interaction to create a new rule
- Click the name field and change it to "Explosion disables building elements" (or your desired title)
- Click the author field and change it to your name, so it stands out
- Click the Description field and change it so it reflects the name
- Leave the Cause as Explosion
- Scroll through the list of Affected elements, checking buildings and un-checking people (we don't want elements being affected twice)
- Click Save to save the changes
- Click Close and Interaction viewer will close
- Move a Building into the Zone of Influence of an Explosion, and watch it change

Other Interactions menu features:

- If you decide that you want to delete a user-created interaction rule, select it, and click the Delete button. Select another rule to be sure the deleted rule is cleared away.
- If you want to keep the rule, but don't want it to work in a particular depiction, check the Interaction Disabled check box and click Save
- To share your interaction rule with others, select it in the list and click Export. Depiction guides you to save it as an XML file, which other Depiction users can Import into their depictions.

There are many possibilities with the relatively simple set of elements, interaction rules and behaviors included with Depiction.