



# SDB

## A Soar Debugger

Glenn Taylor [glenn@soartech.com](mailto:glenn@soartech.com)

Soar Technology, Inc.

Soar 20



# SDB – Capabilities

- ◆ Deep Structure Inspection
- ◆ Watches
- ◆ Breakpoints
- ◆ Production find by name
- ◆ General GUI access to common Soar functionality (popup menus, etc)

# SDB – Highlights

- ◆ Watches and Breaks as productions
- ◆ Break types:
  - on value change
  - on value expression
  - attribute on symbol
  - attribute not on symbol (set)
  - on production fire

# SDB - Environment

The screenshot displays the Soar20 SDB environment with several windows open:

- buff2 @ tomcat.soartech.com:** The main console window showing a list of messages from 313 to 339, all with the message "0: 0264 (wait)". A "Ctrl-C Interrupt" message is visible at the bottom.
- buff2 State Map:** A hierarchical tree view of the environment's state, including elements like S1, ^ada-sites A2, ^agent A10, ^agent A13, ^contact C350, ^id I12, ^info I11, ^relative R29, ^state S51, ^call-sign buff4, ^position P295, ^agl A15, ^units meters, ^side blue, ^vehicle V6, ^tactical A14, ^time-hack T15, ^approach-profile A1, ^call-sign buff2, ^command C2, ^comm C4, ^constant C3, ^control C1, ^conversion C5, ^current-time X39, and ^debug "no".
- buff2 Production Tools:** A window for searching through production rules. The search criteria are "add-named-route". It lists 25 matches, including rules like "add-named-route\*apply\*mark-current-route-achieved\*no-rol" and "add-named-route\*apply\*remove-changes\*attack-egress".
- Environment Preferences:** A window for configuring the environment's appearance, including background color (OldLace), foreground color (black), font (helvetica), and size (13).
- buff2 Watches:** A window showing a watch named "watch1" on the expression "on ^world-time.value" with a value of 20.
- buff2 BreakPoints:** A window showing a breakpoint named "break1" on the expression "on-value-expr S1 ^world-time.value >= 20" with a value of 20.
- SoarDebugger:** A vertical toolbar on the right side of the interface with buttons for Run, Stop, Step, Elaboration, Decision, and Phase.

# SDB – Future

- ◆ More soar features incorporated
- ◆ New features dependent upon the suggestions of the users  
([www.soartech.com/download/sdb.html](http://www.soartech.com/download/sdb.html))

# SDB – Coal and Nuggets

## ◆ Coal

- watches/breaks as productions
- watches/breaks useful debugging paradigm for soar?
- will it be used?

## ◆ Nuggets

- watches/breaks as productions
- helpful for learning soar