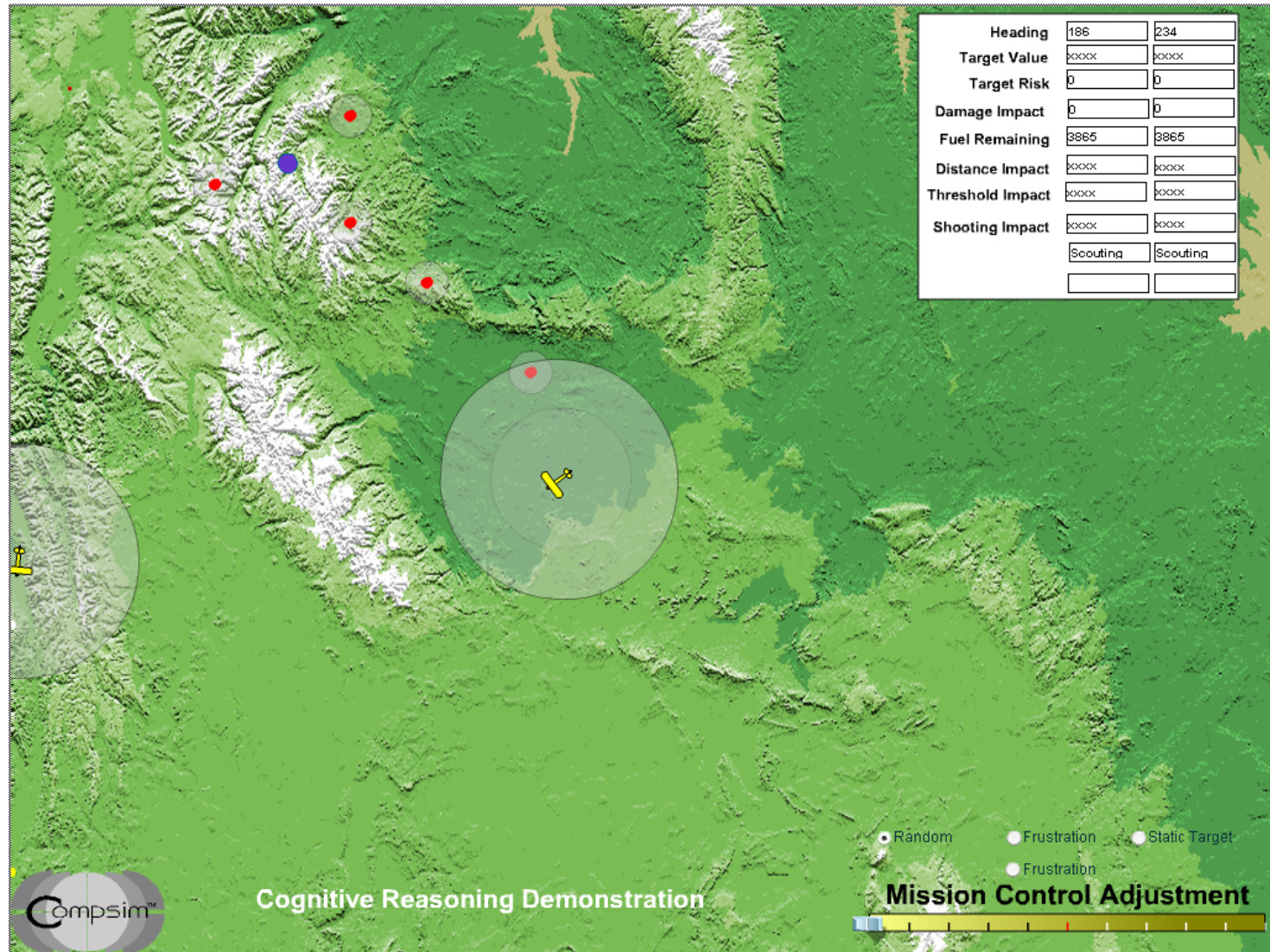
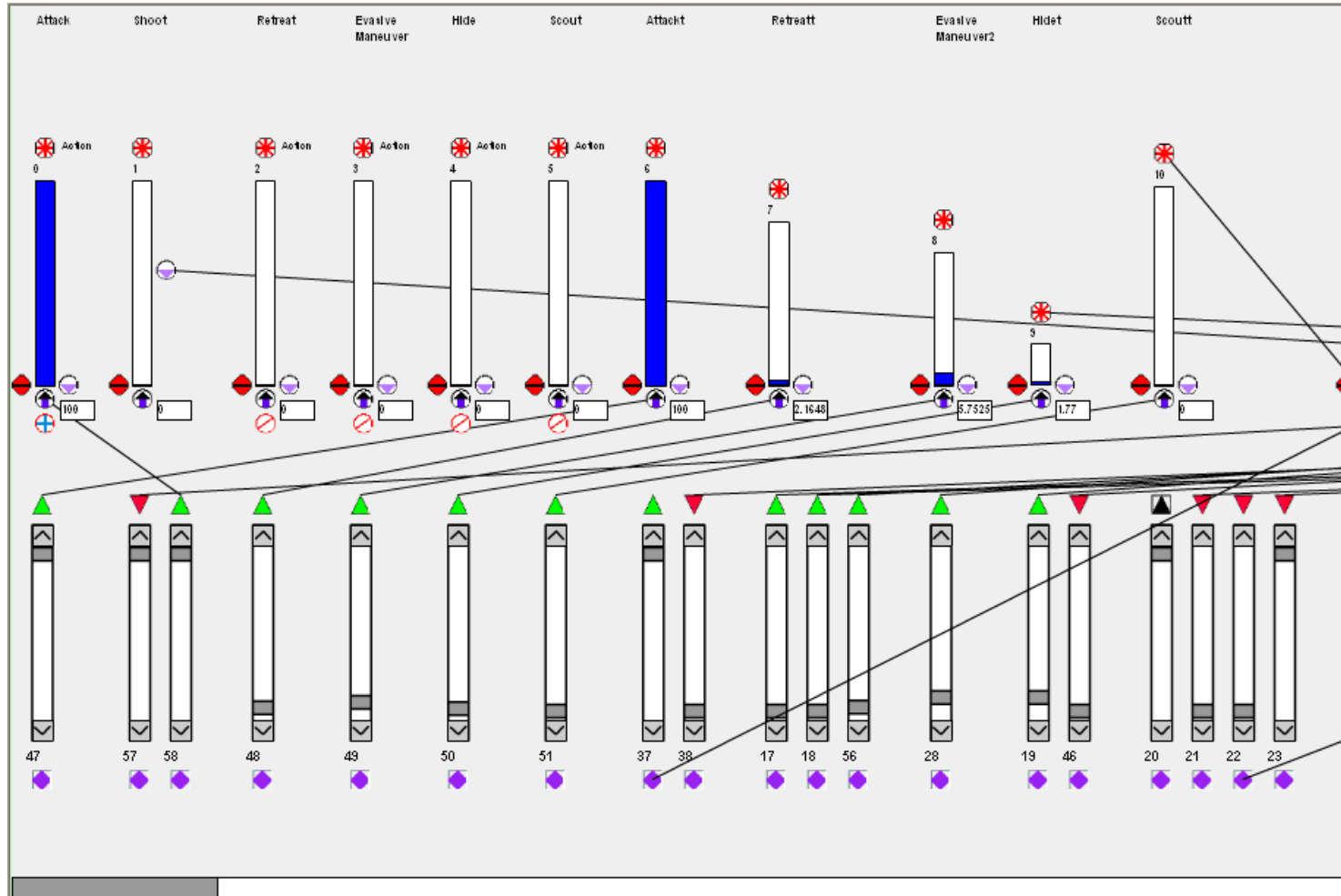


# Demonstrations

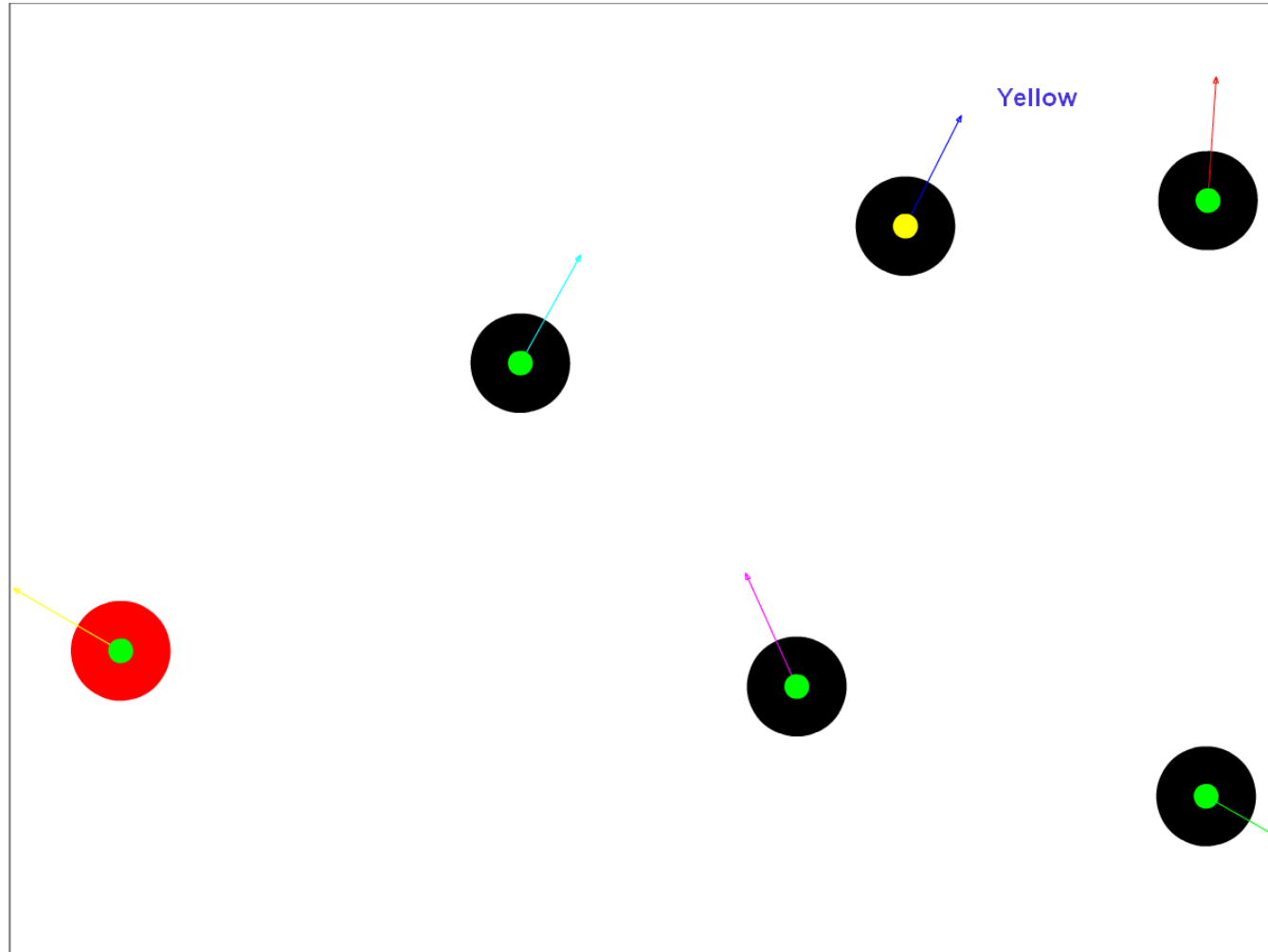
# 1. UAV Demo



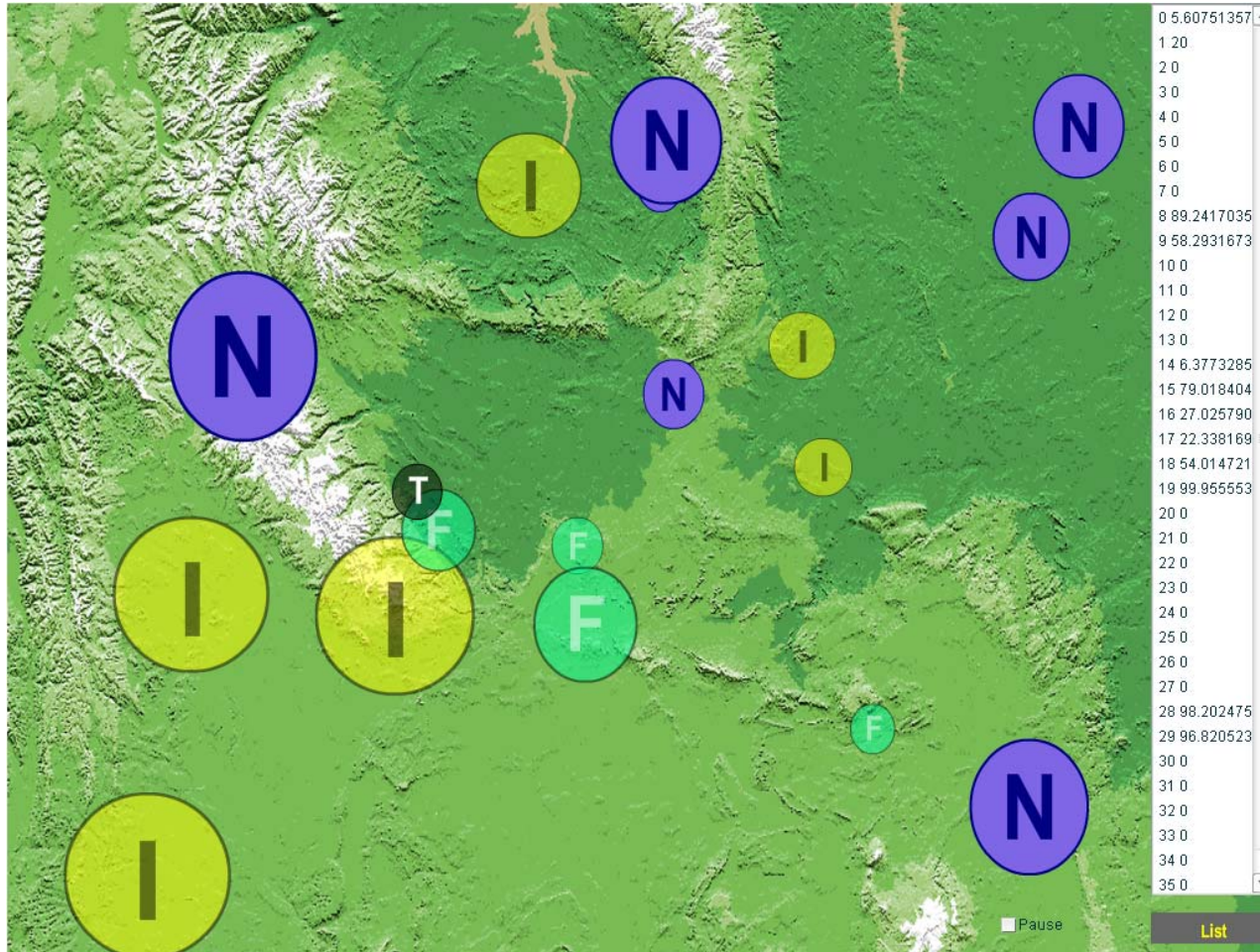
# 2. KEEL Dynamic Graphical Language for UAV Demo



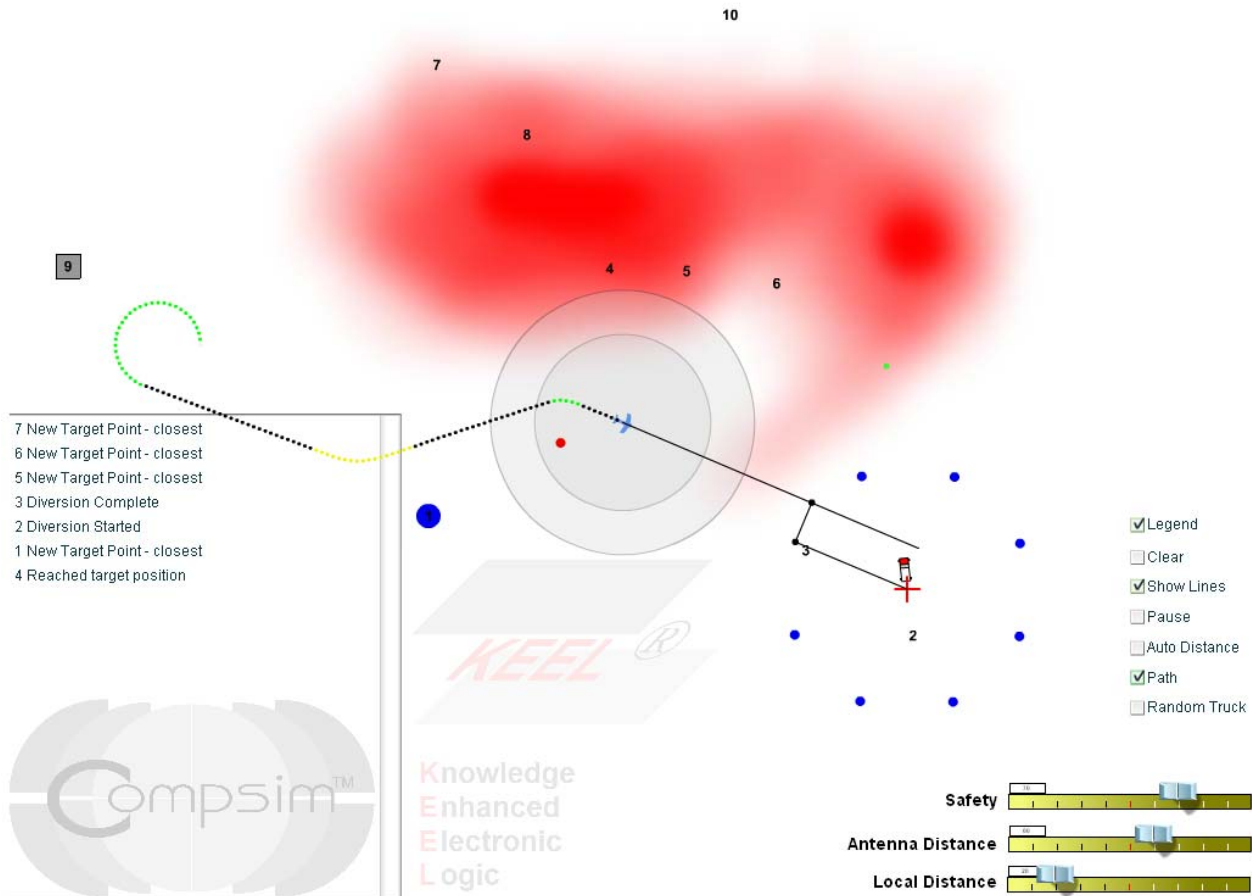
# 3. Swarm Leadership



# 4. Adaptive Targeting

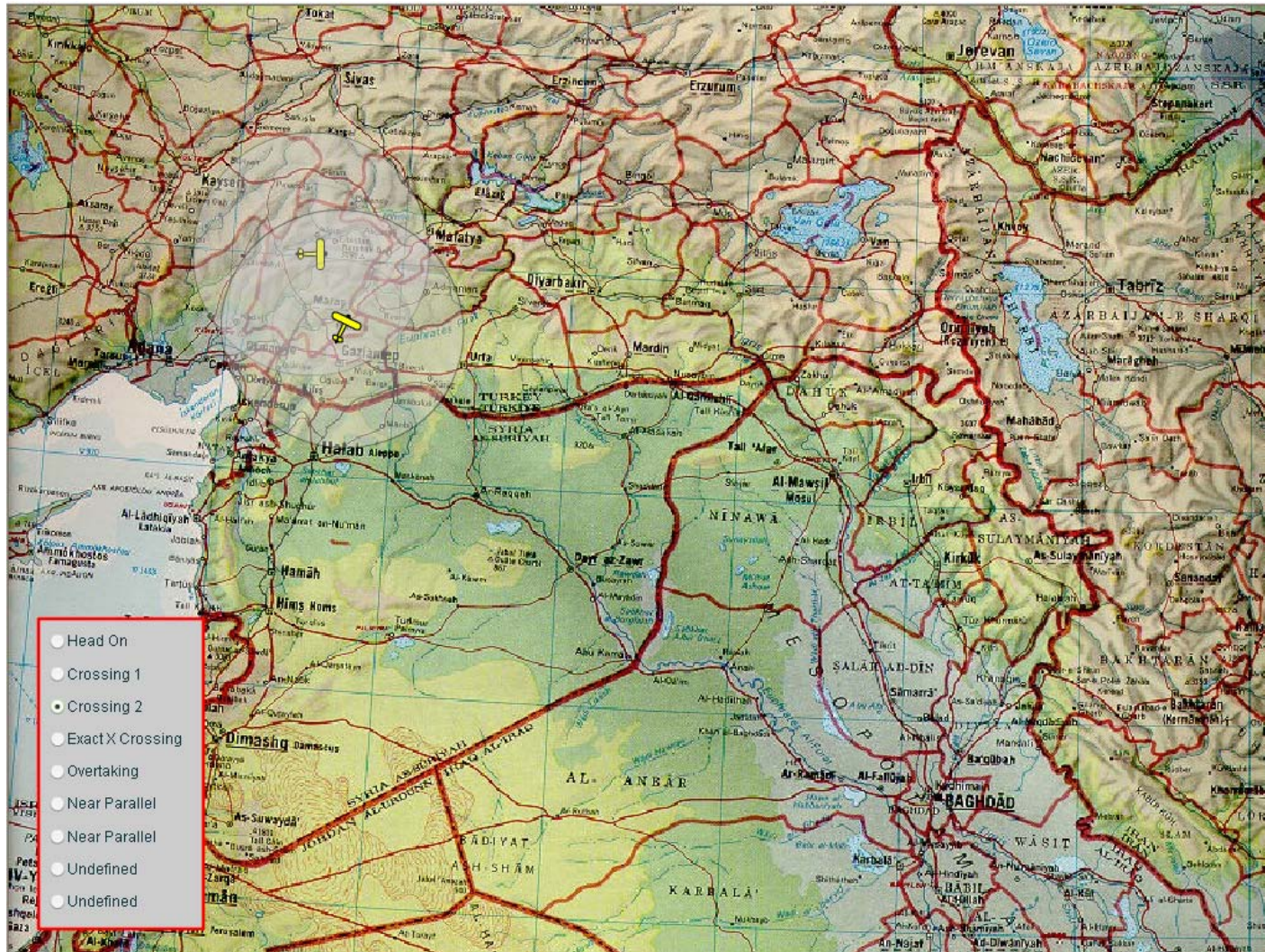


# 5. UAV Surveillance



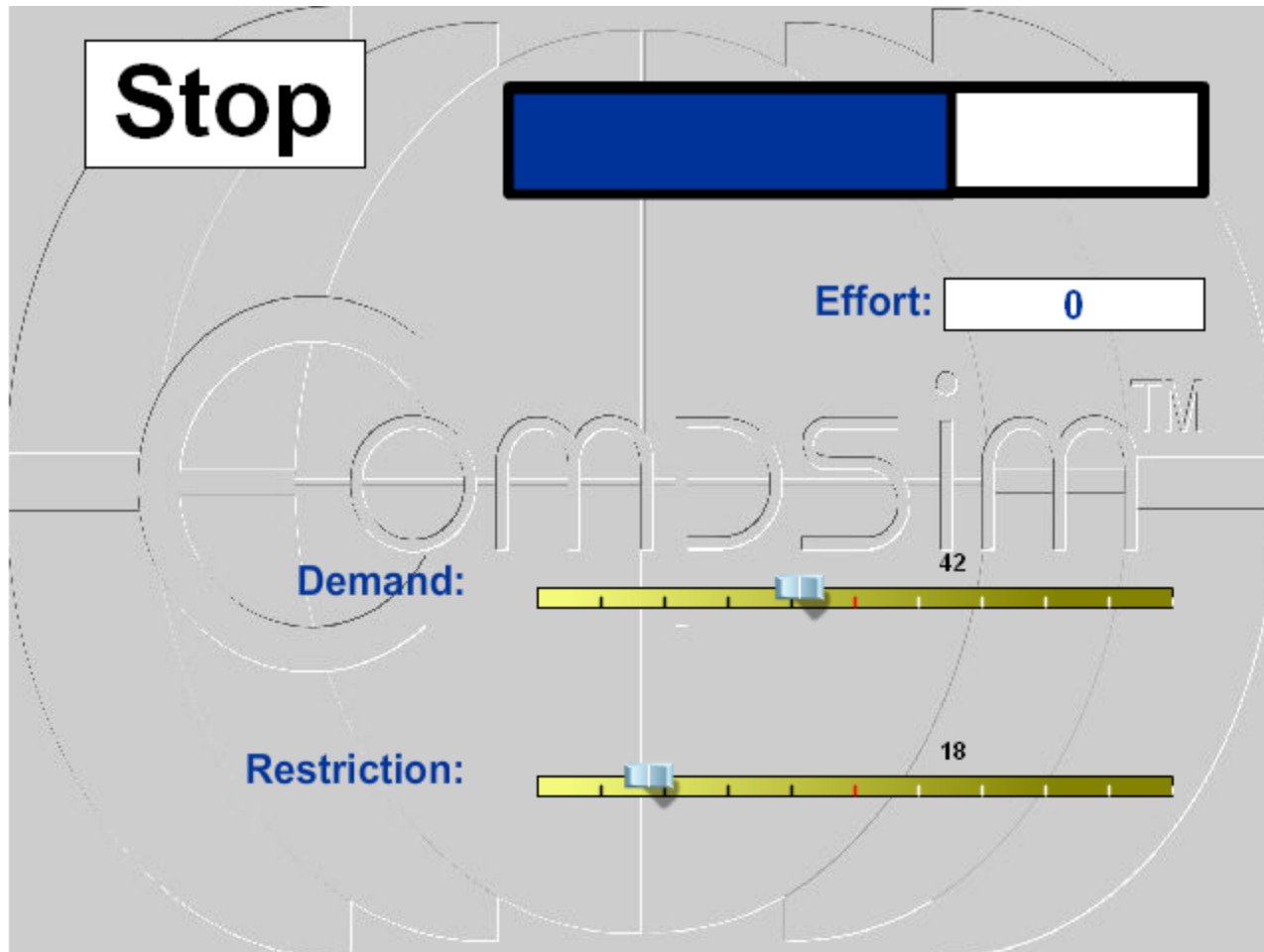


# 7. Controlled Collisions

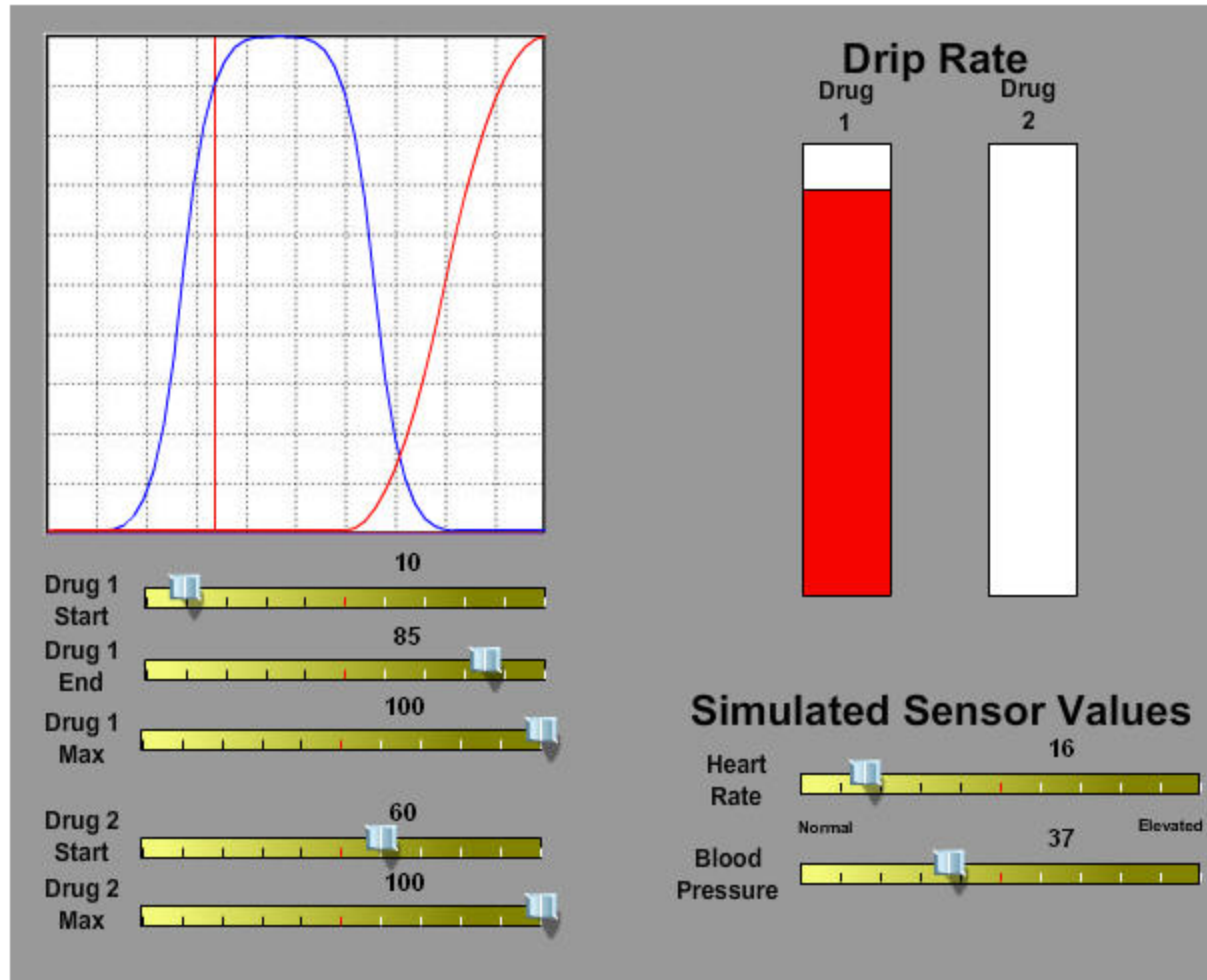




# 9. Artificial Lung



# 10. Dual Drug Dispensing

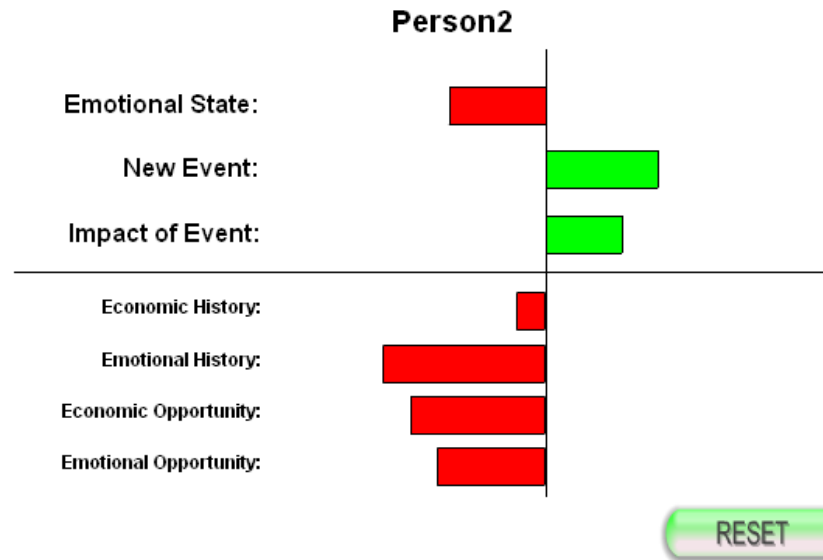
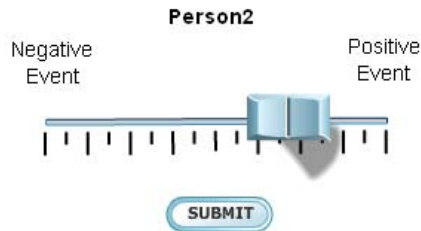


# 11. PDA / Chest Pain Risk Factors



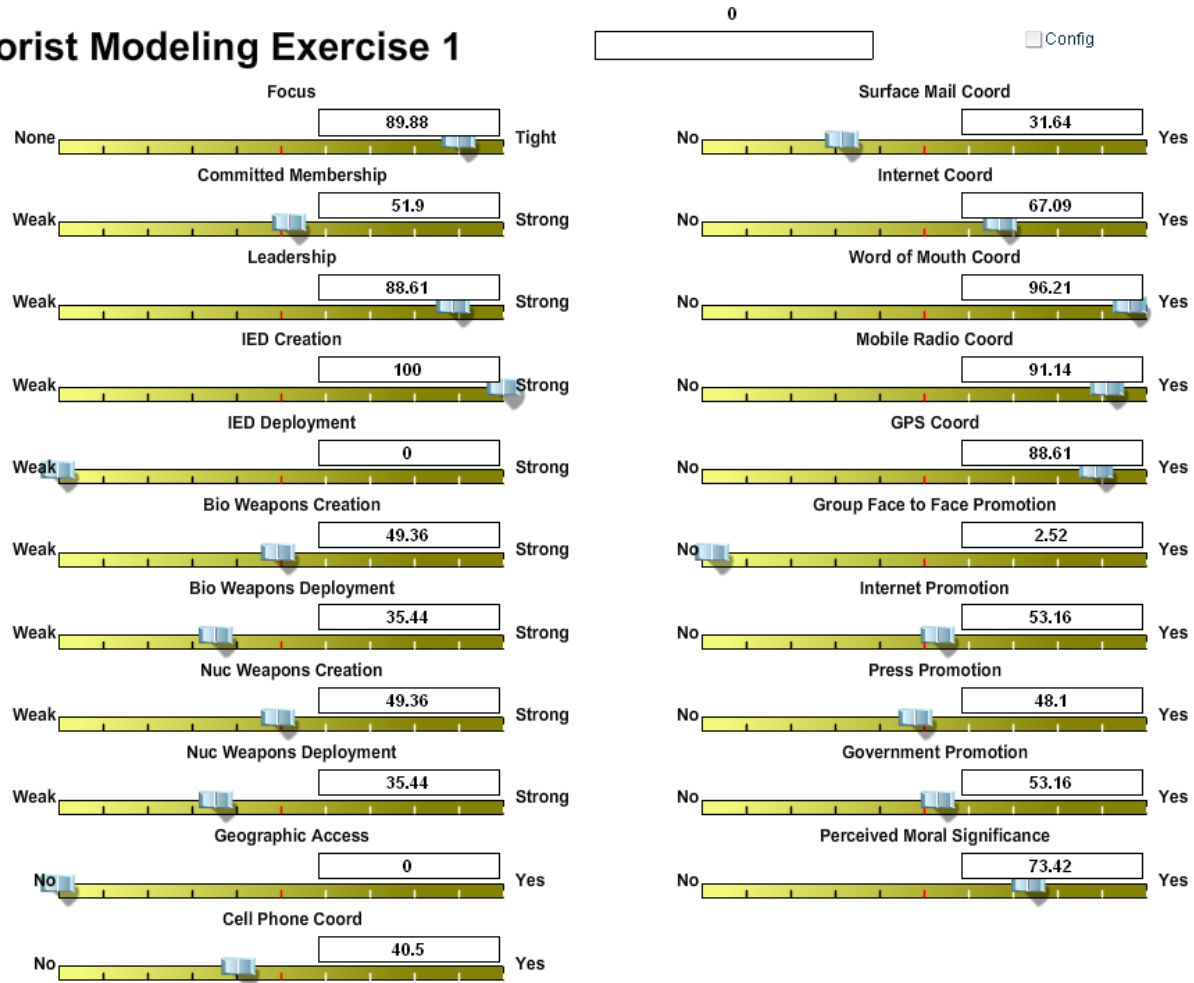
# 12. Human Event Profiling

The objective is to simulate the impact of an event on the person you are profiling. This event can be a positive / supporting event or a threatening event. When you press SUBMIT, this event will be sent to the Compsim server, where background information on the individual will be integrated in a KEEL Engine. This information will be used to calculate an emotional state of the individual, which will be used to determine the how the impact of the event will be treated by that individual. When this impact is very large, the person may react irrationally.



# 13. Group Behavioral Modeling

## Terrorist Modeling Exercise 1



# 14. Automotive Diagnostics

**KEEL**<sup>®</sup>

**K**nowledge  
**E**nhanced  
**E**lectronic  
**L**ogic

This demonstration shows the use of a KEEL engine to traverse a decision tree to help an automotive technician diagnose a problem with an automobile that presents an error diagnostic code 'P0109 Intake Air Temperature Circuit Malfunction' as part of an automated test.

The error diagnostic code has two possible causes (R1 and R2).

The technician is asked to perform some manual measurements to find the exact source of the problem.

The automotive manufacturer has prioritized the tests to identify the problem in the least amount of time with the fewest tests.

The system also demonstrates the use of a 'Modifier', which is an additional piece of information about the automobile or the environment. The Modifier will rearchitect the decision tree to a more optimal test process based on the impact of the Modifier on the problem being diagnosed. In this case the impact of the modifier will determine the order of the tests and also determine whether test S2 is required at all.

The instructions to the maintenance technician are simulated in the top box, while a log of the tests are shown in the lower box.

P0109 Intake Air Temperature Circuit Malfunction

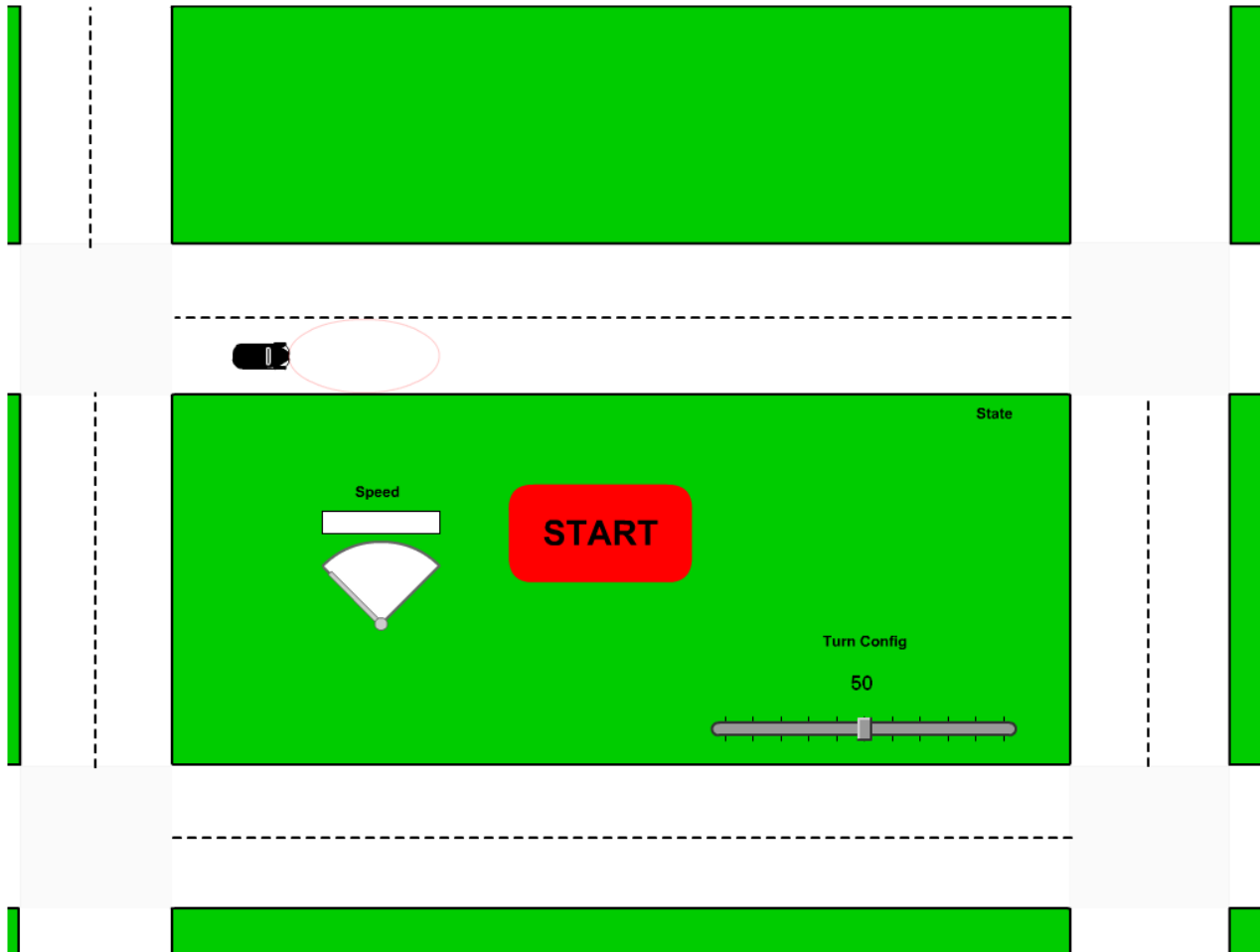
Modifier 33

Run  Reset

In order to test for Reason 1, the maintenance technician should perform test S3.

Did this test identify the problem? Yes  No

# 15. Vehicle Tracking Control



# 16. Stock Picking

**Setup**

This KEEL demonstration shows the integration of five pieces of information (buying / selling by company officers, short sales volume of the specific stock, company news, industry trends, and unemployment trends). This information is used to determine whether to buy, sell, or hold a specific stock. The Setup page allows the user to determine how much each of these pieces of information should influence the decision. The Setup page also allows the user to determine the sensitivity of the system. This means that the user can use the setup adjustments to determine how much or how little change in the five pieces of information will cause the system to recommend that the user take action. A complete system would gather the information for driving the decisions from on-line databases or other automated data sources.

**Company Officers**  
Buying ————— Selling

**Short Sales**  
None ————— Heavy

**Company News**  
Pos ————— Neg

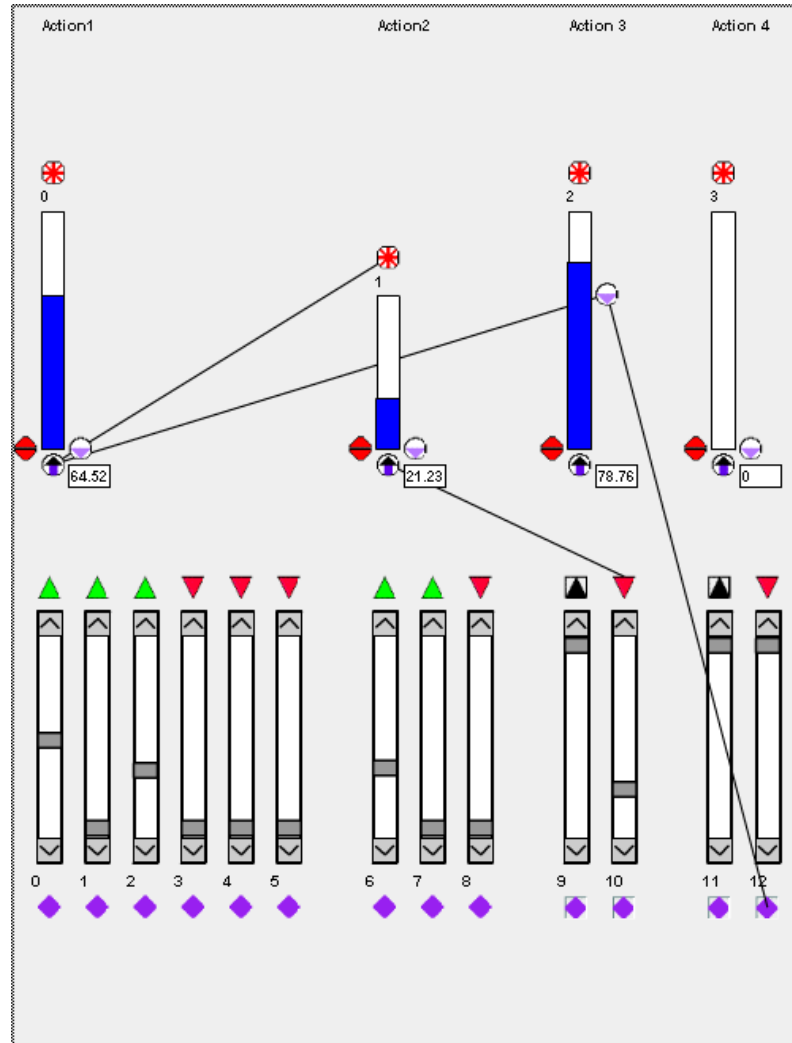
**Industry Trends**  
Pos ————— Neg

**Unemployment Trends**  
Pos ————— Neg

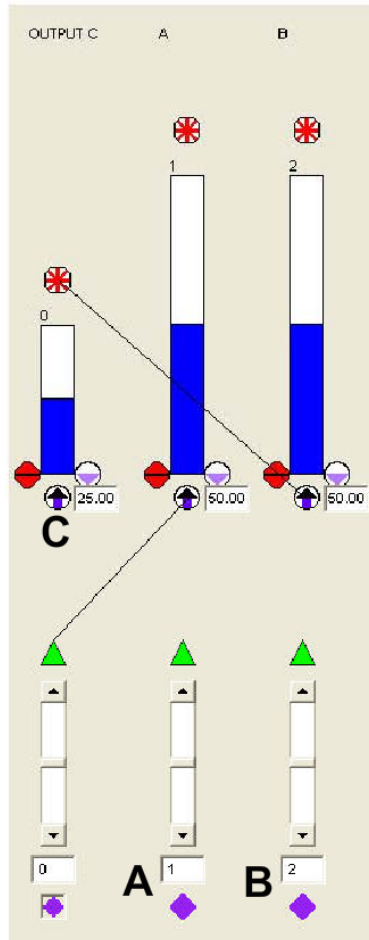
**Hold**

Buy	Sell	Hold
77.20606	77.20606	80

# 17. Dynamic Graphical Language



# 18. Simple KEEL Formula



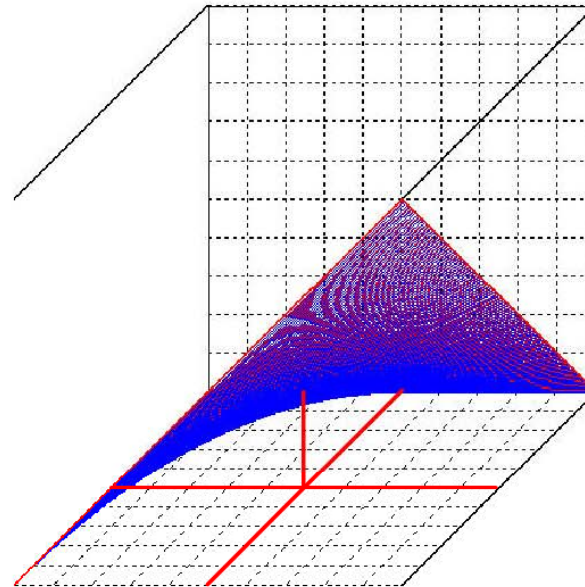
Screen shot of KEEL source code

This is a simple formula described with the KEEL "dynamic graphical language" (left). Variable A "contributes to the accumulation of C". Variable B "controls the importance of C".

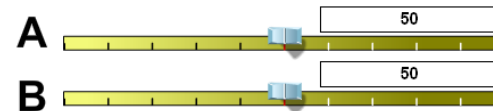
Manipulate the scroll bars to the right and execute the embedded formula.

For any input combination a new value of C is calculated.

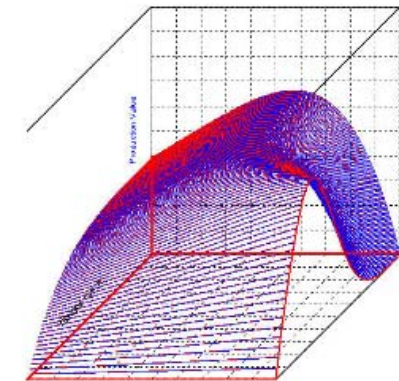
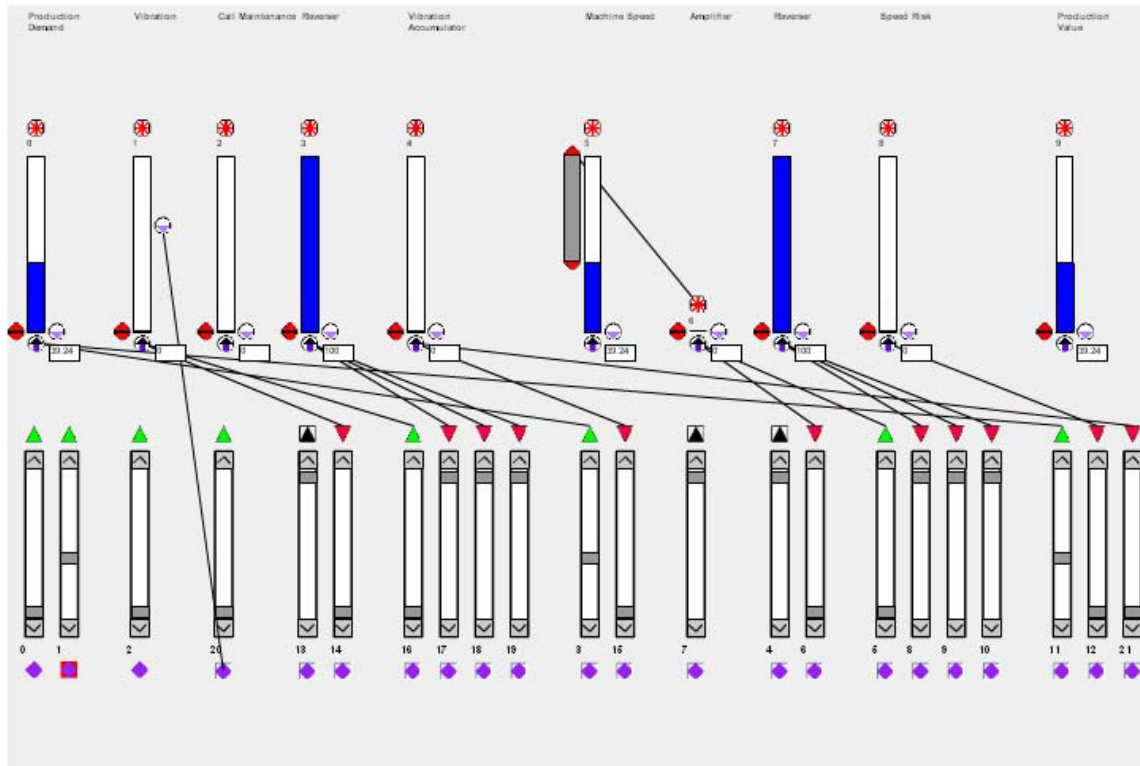
This is a super simple example where the input variables are accumulated in linear fashion. However, non-linear behavior is easy to capture and execute.



C 25



# 19. Non-Linear KEEL Formula



**Extended Production Demand**

0

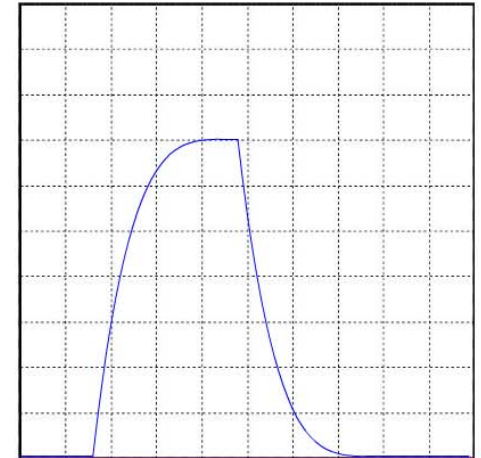
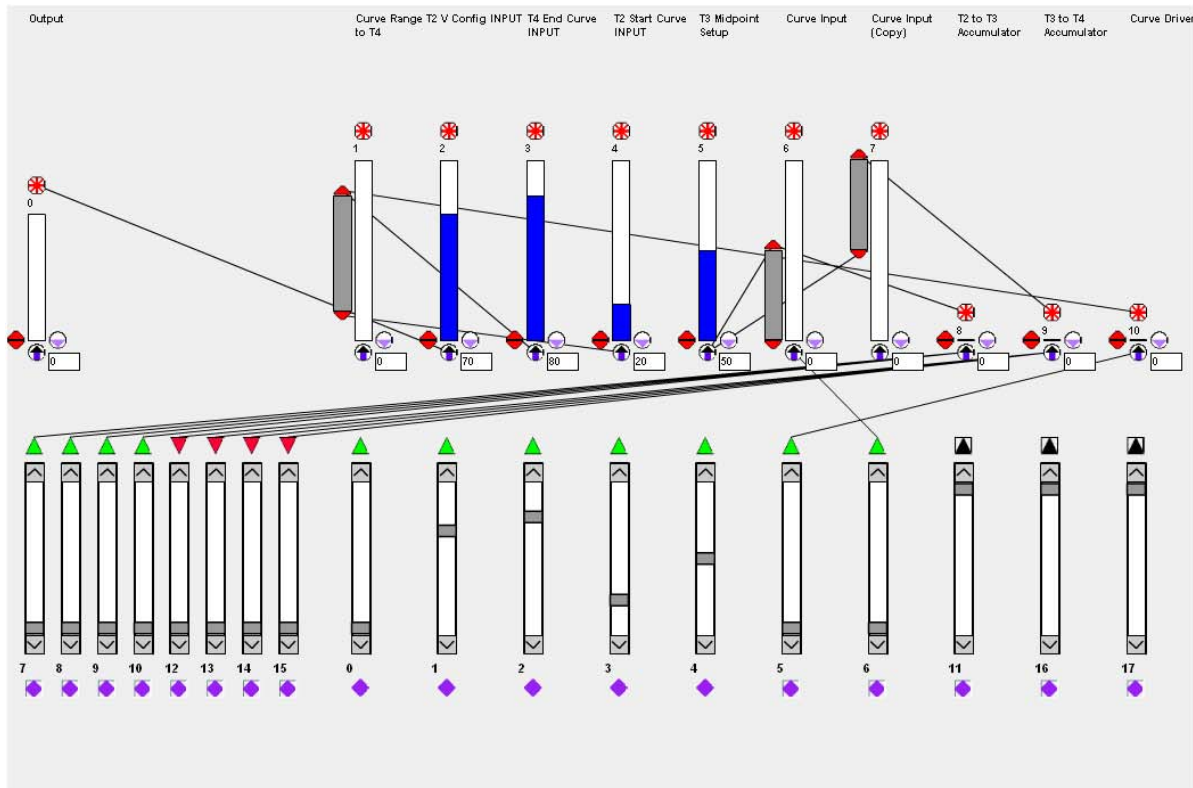
**Vibration**

0

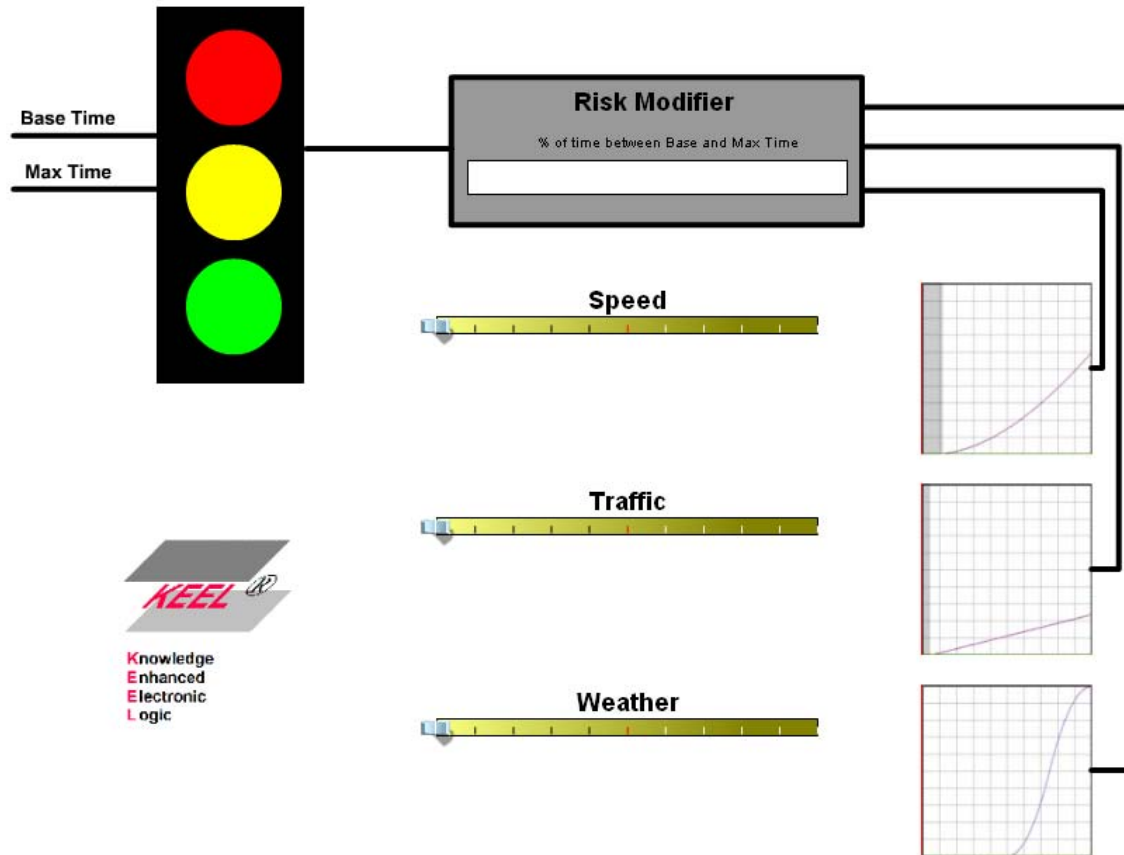
**Production Value**

39.24

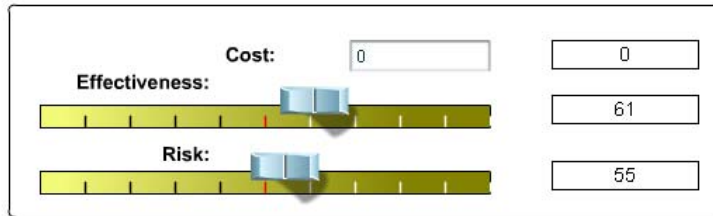
# 20. A Canned Dynamic Curve



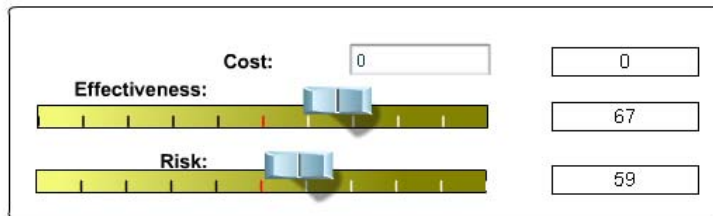
# 21. Data Fusion Problem (Traffic Light)



# 22. Cost Effective Decisions



27.45



27.47

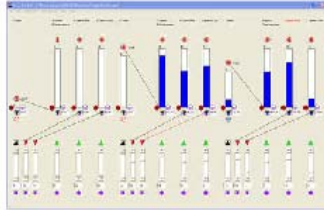


32.4

Evaluate

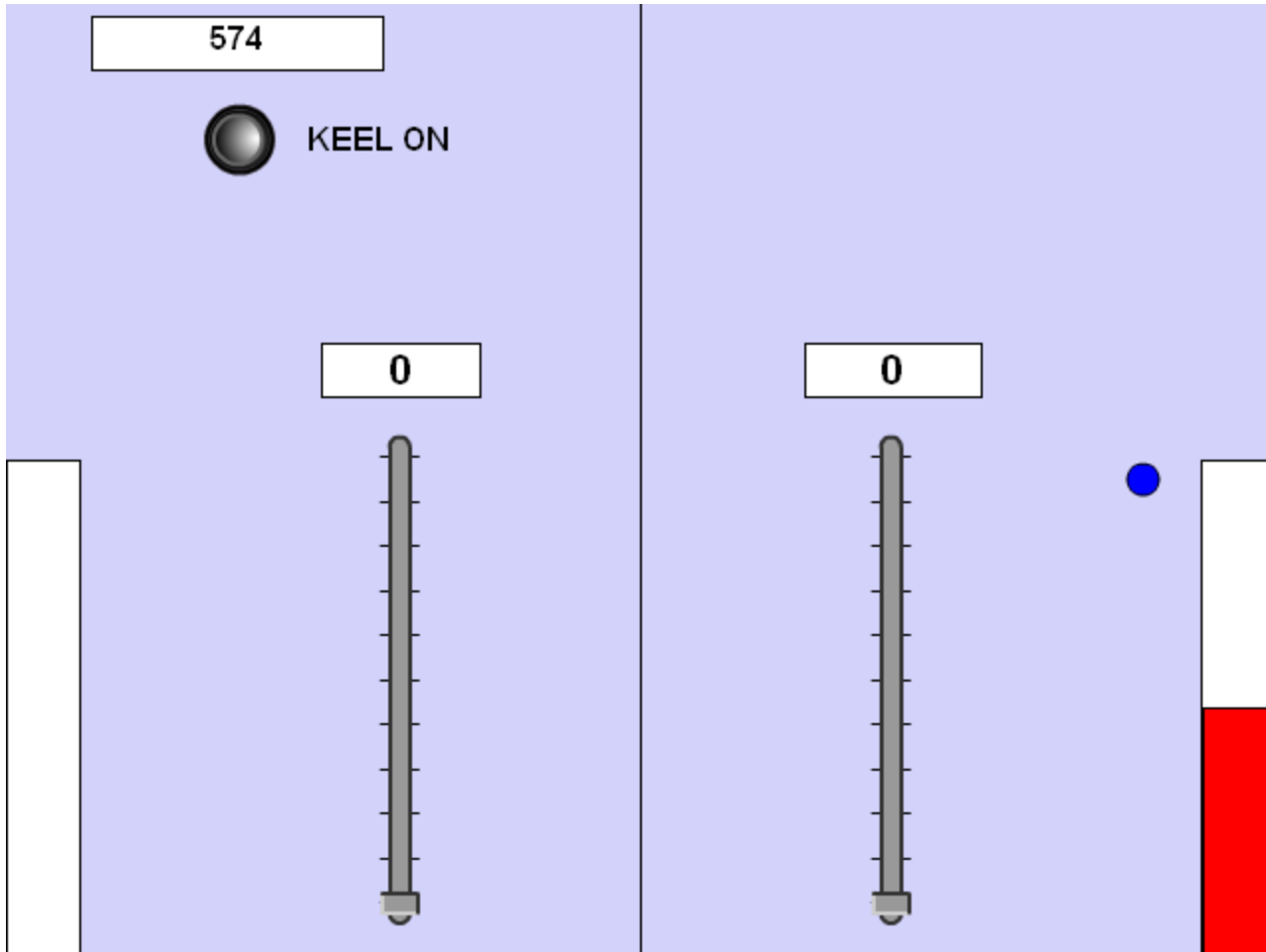


Knowledge  
Enhanced  
Electronic  
Logic

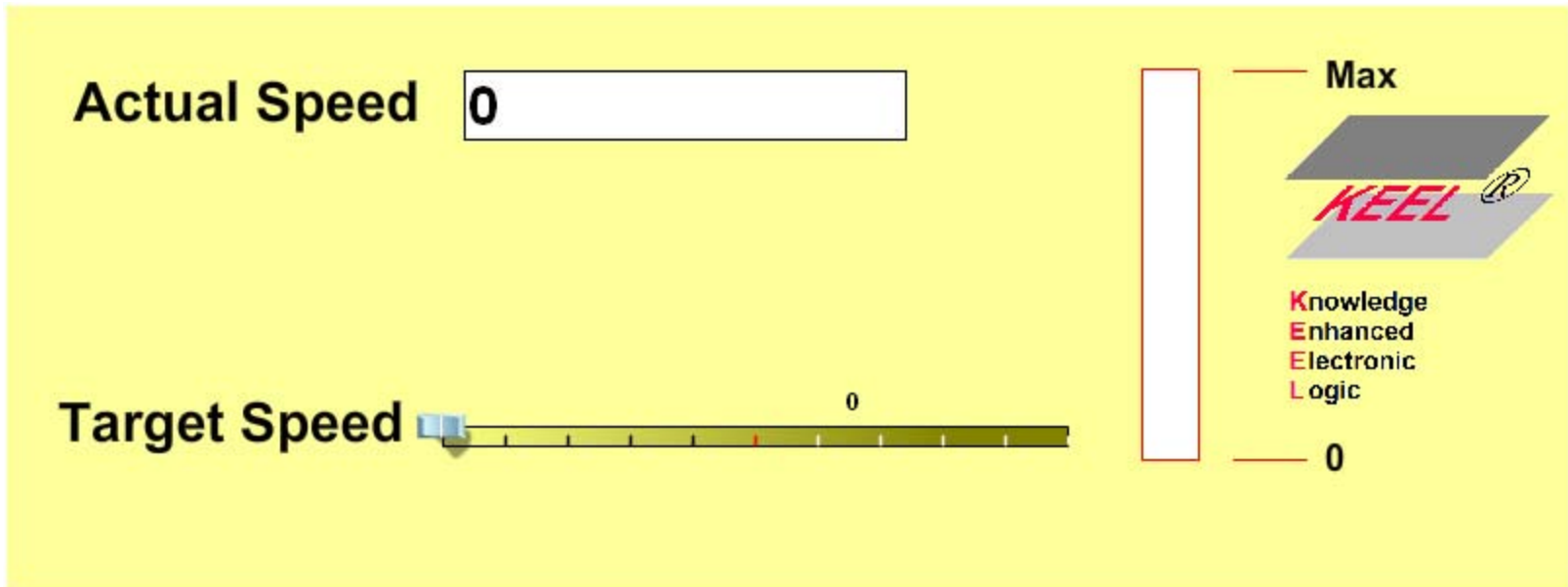


*Cost Effective Decisions*

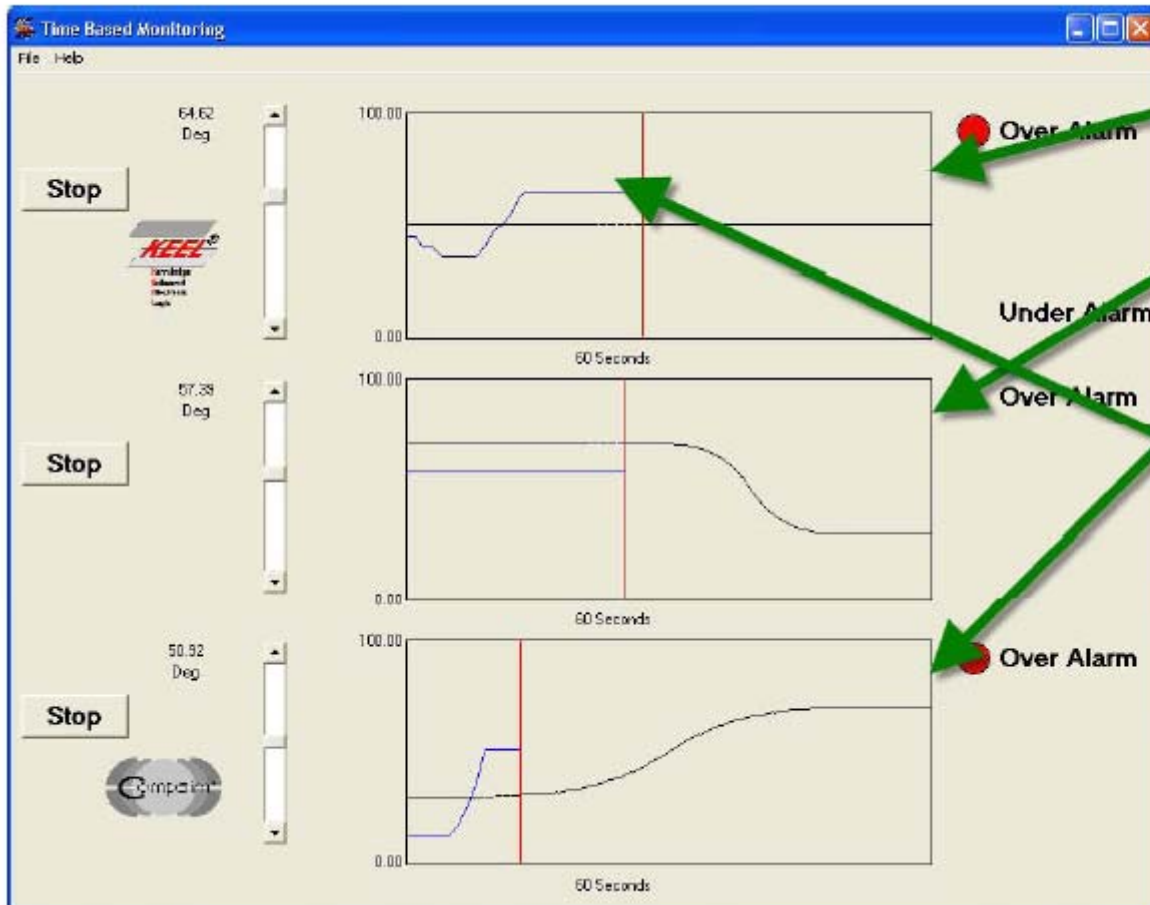
# 23. Feedback Control



# 24. Speed Control



# 25. Time Based Monitoring



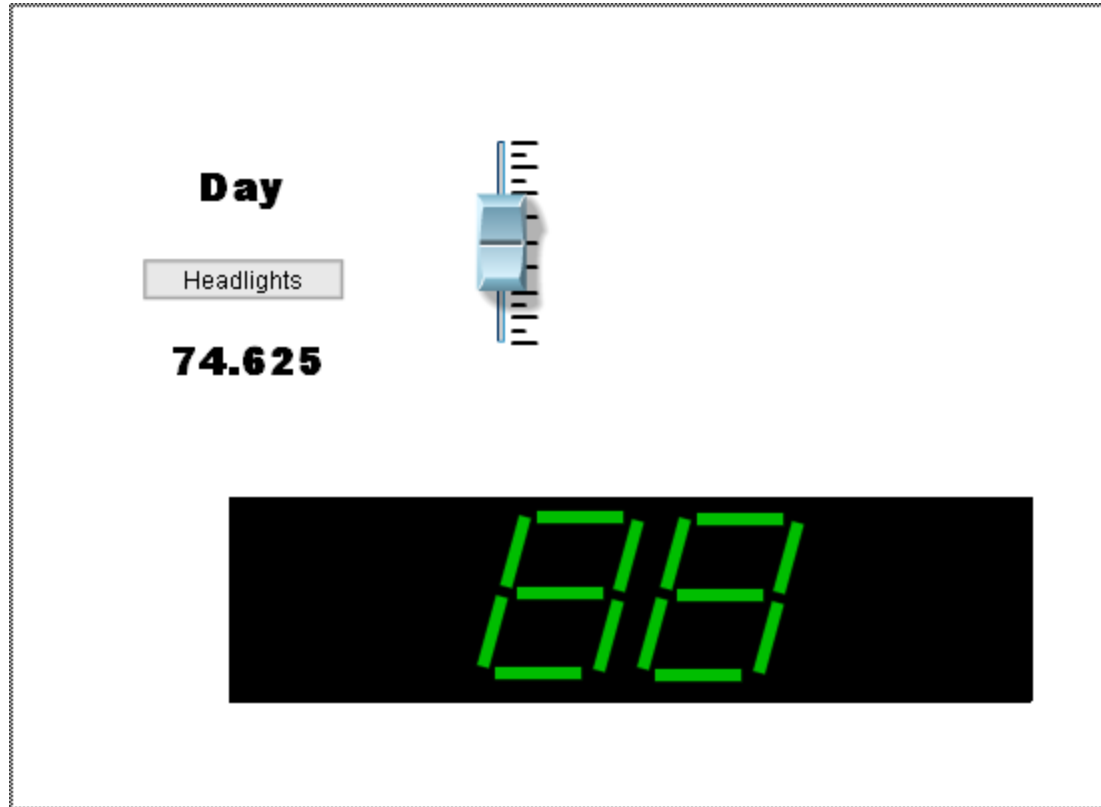
1. Chart 1 was started

2. Chart 2 was started

3. An Over Alarm was detected, which triggered Chart 3 to start

4. Shortly later, Chart 3 detected an Over Alarm

# 26. Dimmer Switch



# 27. Decision to Attack

## Justification for Attack

This exercise is intended to document the justification for an aggressive act. It is provided to indicate the judgmental / subjective reasoning that a person, a tribe, an organization, or a country might exercise in making this decision.

It is offered as a better way of exposing the justification than is available using the English written or verbal language, which is always open to interpretation.

The user is provided with a series of reasons that may cause the individual or organization to choose attack as the preferred option. This is followed with a series of reasons that may cause the individual or organization NOT to attack.

These reasons are combined using Compsim's patented judgmental reasoning model. An analog result is obtained that will range between 0 and 100.

This result will explain the reasoning to attack (or not). It is intended to show how the drivers and blockers might be accumulated.


**Reasons To Initiate an Attack**

Acquire additional territory

NO YES

SET

# 28. Frustration Models




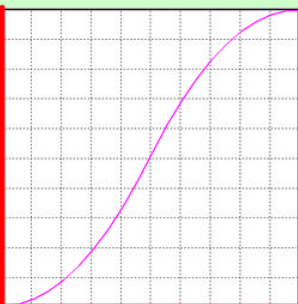
**Success** **Failure**

**Get Frustration Level**

Frustration Level:

Span Time Constant (seconds):

Set



Span Time Constant (seconds):

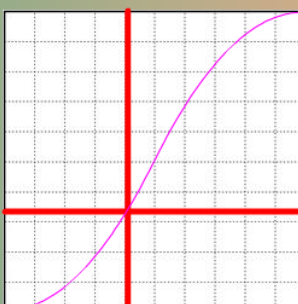
Offset Time Constant (%):

Curve Shape Midpoint (%):

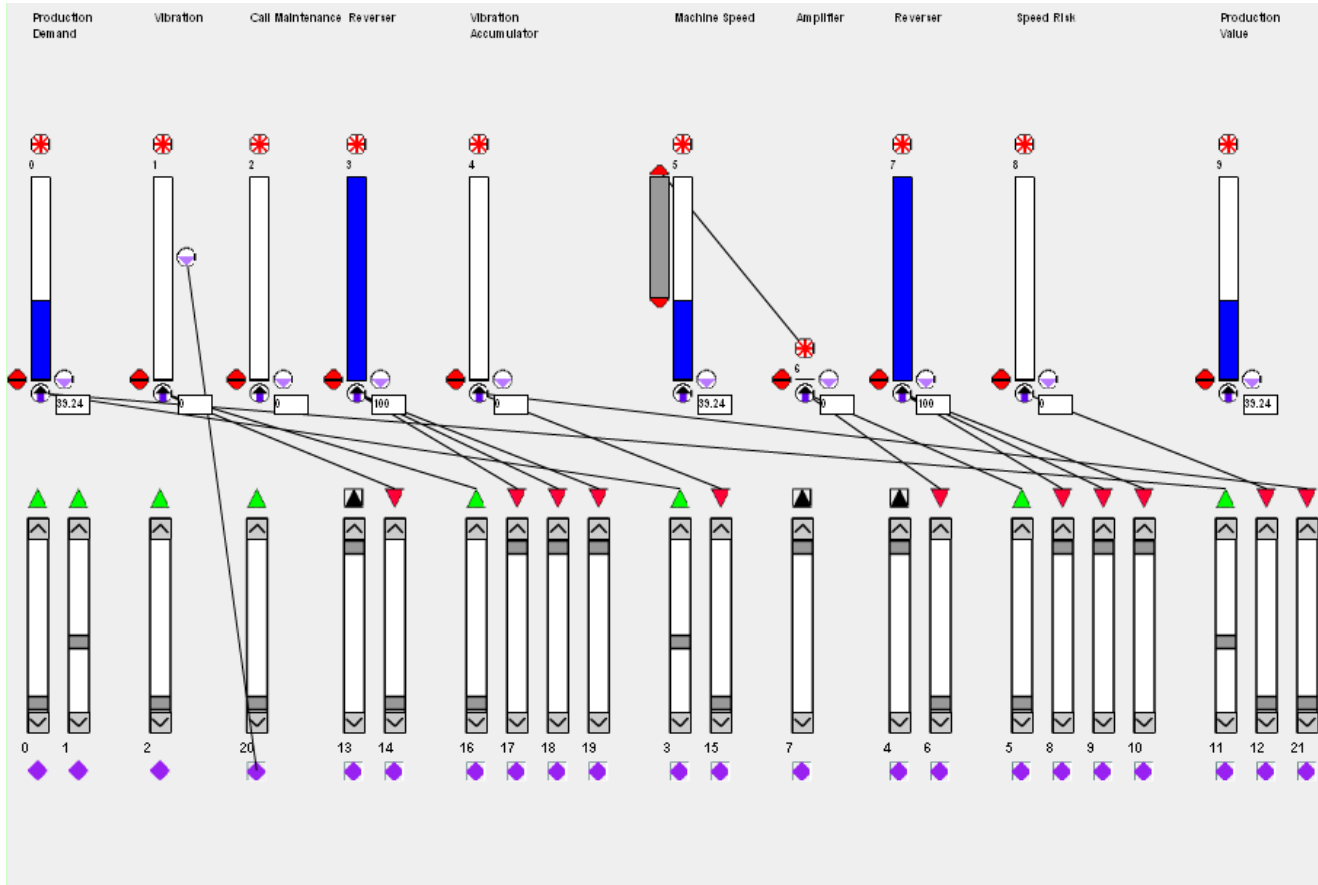
Set

**Start** **Success (Reset)**

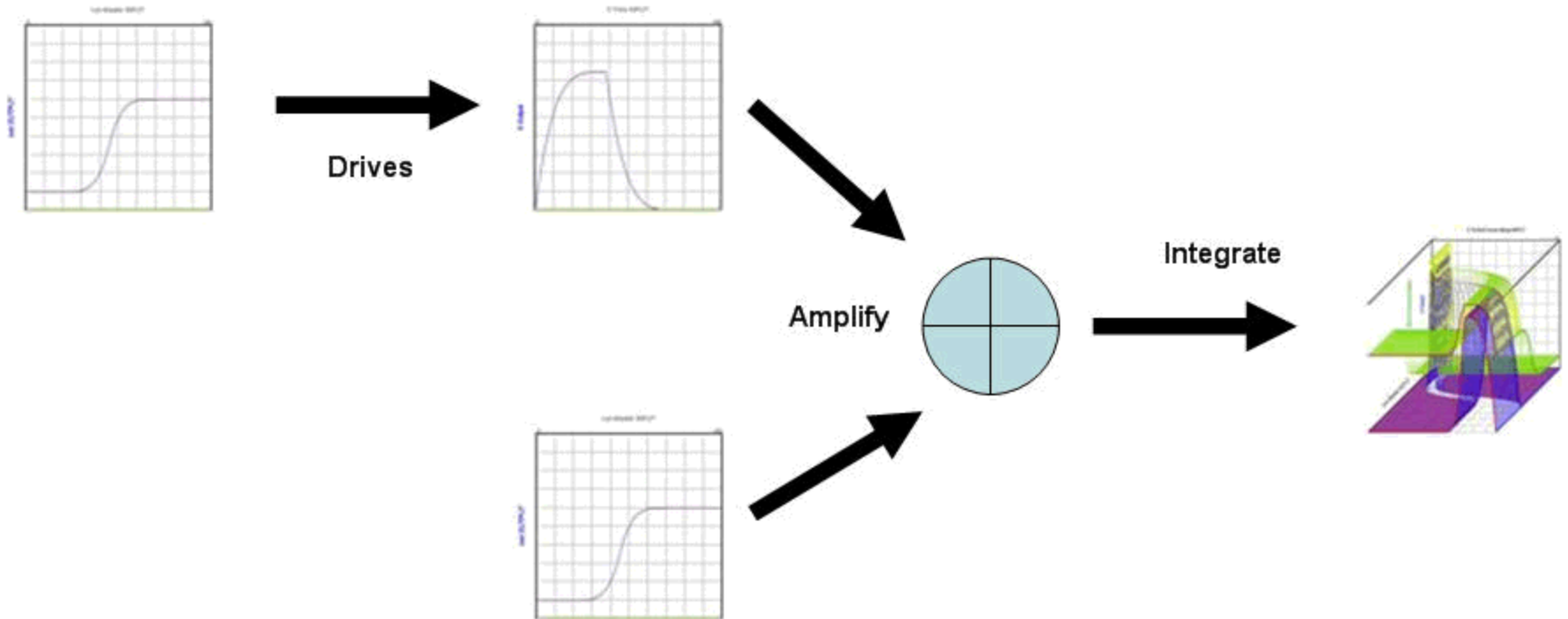
Frustration Level:



# 29. Intelligent PLC / PAC



# 30. Heuristic Reasoning



# 31. Opinionizer™

**SUBMIT**

100		<b>Acura</b>	<input type="range"/>
100		<b>Alpha Romeo</b>	<input type="range"/>
100		<b>Audi</b>	<input type="range"/>
100		<b>Cadillac</b>	<input type="range"/>
100		<b>Ferrari</b>	<input type="range"/>
100		<b>Jaguar</b>	<input type="range"/>
100		<b>Lexus</b>	<input type="range"/>
100		<b>Mercedes</b>	<input type="range"/>
100		<b>Porsche</b>	<input type="range"/>
100		<b>Rolls Royce</b>	<input type="range"/>

Patent No. 6,760,039 - Comps In LLC