

SISO Simulation Smackdown

Modeling and Simulation Outreach



Edwin Z. Crues

NASA Johnson Space Center

Software Robotics and Simulation Division

Simulation and Graphics Branch

Overview

Motivations

- Smackdown Basics

Committees

- Smackdown Committees

Scenario

- Smackdown 2010-2011 Scenario

Federate

- Smackdown Federates

Schedule

- Proposed Schedule

Coalition

- Current Coalition

Closing Remarks

- Closing Remarks

Discussion

- Discussion

Smackdown Basics

Basics

- What is the SISO Simulation Interoperability Smackdown?
- Why have a Smackdown?
- Who will be involved in the Smackdown?
- When will the Smackdown events be held?
- Where will the Smackdown events be held?

Committees

Scenarios

Federates

Schedule

Coalition

Closing Remarks

Discussion

Smackdown Basics

What is the SISO Smackdown?

Basics

- The SISO Simulation Interoperability Smackdown is an effort to promote the concepts of modeling and simulation as a discipline at the university undergraduate and graduate levels and to raise the awareness of modeling and simulation down into the K-12 grades.
- This will be accomplished through a participatory program that will involve students and faculty in "building" an HLA based distributed simulation of a space system.
 - Being the first year, we're going to keep it simple.
 - A Lunar Base scenario will be this years activity.
 - See details in subsequent slides.

Committees

Scenarios

Federates

Schedule

Coalition

Closing Remarks

Discussion

Smackdown Basics

Why have a Smackdown?

Basics

- Modeling and simulation is a critical tool in both science and engineering. Unfortunately, programs that provide strong educational background in modeling and simulation are rare.
- The SISO Simulation Interoperability Smackdown is an effort to promote better awareness and understanding of both the importance and the complexity of modern modeling and simulation through hand-on mentoring and participation with modeling and simulation practitioners.

Committees

Scenarios

Federates

Schedule

Coalition

Closing Remarks

Discussion

Smackdown Basics

Who will be involved in the Smackdown?

Basics

- Sponsors
 - Simulation Interoperability Standards Organization (SISO)
 - Industry
 - Government
- Mentors
 - Industry
 - Government
 - University Faculty
- Participants
 - Core capabilities by sponsor groups
 - Support federates by mentors
 - Smackdown federates by students and faculty

Committees

Scenarios

Federates

Schedule

Coalition

Closing Remarks

Discussion

Smackdown Basics

When is the SISO Smackdown?

- Basics
- Committees
- Scenarios
- Federates
- Schedule
- Coalition
- Closing Remarks
- Discussion
- The Smackdown will operate on an annual schedule that lines up well with most semester based university calendars.
- Workshops in the Fall:
 - We will have an annual workshop at the SISO Fall SIWs (mid-September).
 - This workshop will lay out the parameters for that years smackdown, establish information models (FOMs), educate incoming participants, and more.
- Smackdown in the Spring:
 - We will hold an actual simulation execution(s) during the SISO Spring SIWs (early April).

Smackdown Basics

Where are the Smackdown events?

- Basics
 - 2010-2011 Smackdown Workshop
 - SISO Fall 2010 SIW
 - September 20-24
 - Florida Mall Conference Center
 - Orlando, Florida
- Committees
- Scenarios
- Federates
- Schedule
 - 2010-2011 Smackdown Event
 - SISO Spring 2011 SIW
 - April 4-8
 - Long Wharf Marriott
 - Boston, Massachusetts
- Coalition
- Closing Remarks
- Discussion

Committees

Basics

Committees

Scenarios

Federates

Schedule

Coalition

Closing Remarks

Discussion

- **Smackdown Executive Committee (SEC):**
 - Reach out and establish support from government, defense, industry and academia and provide guidance and direction on the overall Smackdown activity. While expecting the real day-to-day work to be done in the working committees, the SEC will be critical in keeping us focused and in making the appropriate contacts.
- **Planning Committee:**
 - Organize, schedule and plan for all activities Smackdown related. This is a very important group. This committee will need to have a strong chair with good organizational skill and a clear vision of what needs to be done to meet the Spring SISO SIW objectives.
- **Outreach Committee:**
 - Work with the planning committee and the technical committee to publicize the Smackdown, communicate the vision of the Smackdown to outside organizations and recruit faculty, students, sponsors and mentors to support the Smackdown.
- **Technical Committee:**
 - Plan and organize the detailed technical execution of the Smackdown. This will include scenario development, FOM development, network coordination, computer systems coordination, federation test executions and mentoring.

Smackdown 2010-2011 Scenario

Basics

- The scenario will be to simulate operation on and in the proximity of the Earth's moon.

Committees

Scenario

- We plan on providing an environmental core (federate) with state information for the Sun, Earth and Moon. These will include the position of all and the planetary attitude for the Earth and the Moon.

Federates

Schedule

- We will provide a transfer vehicle (federate) that will fly from the Earth to the Moon. Our intent is that this could provide a base vehicle for groups that might want to just add subsystems models and not a participating vehicle.

Coalition

Closing Remarks

Discussion

Other Possible Federates

Basics

- A simple monitoring federate that virtually anyone can use to get a snapshot or overview of the state of the execution.

Committees

Scenarios

- A visualization federate that virtually anyone can use to view the state of the federation execution from various (probably select) federate perspectives.

Federate

- A lunar surface simulation (probably an rover and astronaut).

Schedule

Coalition

- From here there are many possibilities. We can have habitat models, communications network models, power systems models, . . .

Closing Remarks

Discussion

Schedule

Proposed

Basics

- July 2010:

- Stand up Smackdown Executive Committee.

Committees

- Stand up Smackdown working committees: Planning, Outreach, Technical

- Establish core objectives and parameters for 2010-2011 Smackdown

- Develop initial outreach material.

Scenarios

- August 2010:

- Establish base FOM for 2010-2011 Smackdown: FOM 1011.a0

- Establish initial connectivity concepts and plans

- Develop initial working prototype of NASA core federates.

Federates

- Develop workshop material.

Schedule

- Sept. 20-24, 2010: SISO Fall 2010 SIW: Smackdown Workshop:

- Will provide a 2-4 hour workshop on participating in the Spring

- Smackdown. Will provide potential participants with information on the parameters of the Smackdown and connections to resources for participating (Smackdown apps, HLA training material, sponsor support, schedules, technical details, FOMs, etc).

Coalition

Closing Remarks

- Release FOM 1011.a1

Discussion

Schedule

Proposed (Continued)

Basics

- October 2010:
 - Smackdown tag up.
 - Establish initial network connectivity for demonstration.
 - Work with potential participants to get them connected.
 - Release FOM 1011.a2
- November 2010:
 - Smackdown tag up.
 - Simple demonstration of the Smackdown network.
 - Simple federation execution test.
 - Release FOM 1011.b1
- December 2010:
 - Holiday break for everyone.

Committees

Scenarios

Federates

Schedule

Coalition

Closing Remarks

Discussion

Schedule

Proposed (Continued)

- Basics
 - January 2011:
 - Smackdown tag up.
 - All Smackdown participants should have registered their intent to participate with descriptions of their role and federate(s).
 - Release FOM 1011.b2 (possible a3 if necessary).
- Committees
- Scenarios
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- Schedule
 - February 2011:
 - Smackdown tag up.
 - First full up Smackdown test execution.
 - FOM updates if necessary.
 - March 2011:
 - Smackdown tag up.
 - Second full up Smackdown test execution.
 - Release final Smackdown FOM 1011.
- Coalition
- Closing Remarks
 - Apr. 4-8, 2011: SISO Spring 2011 SIW: Smackdown Event:
 - SISO SIW Smackdown presentation in booth area.
 - SISO SIW Smackdown execution
 - SISO SIW Smackdown session
- Discussion

Coalition

- Current coalition members

SISO Simulation Smackdown Coalition Members

Name	Affiliation	email	Phone	Role
Cimino, Antonio	MSC-LES	acimino@unical.it	(+39) 32.8842.8984	
Conroy, Mike	NASA/KSC	Mike.Conroy@nasa.gov	(+1) 321.867.4240	NASA SEC Rep
Crues, Edwin (Zack)	NASA/JSC/ER7	edwin.z.crues@nasa.gov	(+1) 281.483.2902	
Cutts, Dannie	AEgis	dcutts@aegistg.com	(+1) 256.922.0802	
Daehler-Wilking, Richard	SPAWAR (US Navy)	r.daehler-wilking@navy.mil	(+1) 843.218.4768	Scope, Promo
de Weck, Olivier	MIT	deweck@mit.edu	(+1) 617.816.4956	
Dexter, Dan	NASA/JSC/ER7	dan.e.dexter@nasa.gov	(+1) 281.483.1142	
Elfrey, Priscilla	NASA/KSC	Priscilla.R.Elfrey@nasa.gov	(+1) 321.867.9153	SISO SEC Rep
Fay, John	Jacobs Technology	john.fay.ctr@eglin.af.mil	(+1) 850.883.1294	
Gustavsson, Per	Saab AB	per.m.gustavsson@saabgroup.com	(+46) 768.96.76.62	
Hasan, David	L3 Comm (NASA JSC)	david.hasan@L-3com.com	(+1) 512.892.7099	Scope, FOM
Hubbard, Joe	NASA/JSC/ER7	joseph.v.hubbard@nasa.gov	(+1) 281.483.1879	
Konwin, Kenneth (Crash)	Booz Allen	Konwin_Kenneth@BAH.com	(+1) 703.984.1099	
Lof, Staffan	Pitch	Staffan.Lof@Pitch.se	(+46) 13.470.55.22	
Longo, Francesco	MSC-LES	f.longo@unical.it	(+39) 32.0425.8020	
Mabie, Kevin	Valador	kevin.mabie@valador.com	(+1) 571.437.4032	Scope, FOM
Miller, Duncan	SISO	dmiller@sisostds.org	(+1) 781.271.9872	
Sandberg, Stefan	Pitch	Stefan.Sandberg@Pitch.se	(+46) 13.470.55.02	
Severinghaus, Rick	AEgis	rseveringhaus@aegistg.com	(+1) 757.348.4709	
Shirisaka, Seiko	Keio University	shirasaka@sdm.keio.ac.jp	(+81) 45.564.2518	
Sielbold, Karl	Embry-Riddle University	karl.sielbold@erau.edu	(+1) 928.777.3751	
Steele, Martin	NASA/KSC	martin.j.steele@nasa.gov	(+1) 321.867.8761	
Swan, Pete	VT MAK	pswan@mak.com	(+1) 407.314.0064	
Thomas, Danny	AEgis	d.thomas@aegistg.com	(+1) 256.922.0802	
Turnitsa, Chuck	ODU	cturnitsa@odu.edu	(+1) 757-638-6315	
Waite, Bill	AEgis	bwaite@aegistg.com	(+1) 256.922.0802	Industry SEC Rep
Wallace, Randy	US Army Space and Missile Defense Command	randy.wallace@us.army.mil, romeowhisky06@gmail.com	(w)(+1) 256.955.9945, (m)(+1) 256.797.7591	

Closing Remarks

Basics

Committees

Scenarios

Federates

Schedule

Coalition

Closing Remarks

Discussion

Discussion?

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- Committees
- Scenarios
- Federates
- Schedule
- Coalition
- Closing Remarks
- Discussion**

