Integrated Vehicle/Track Interaction and Dynamics

Creating the Strategic Development Plan

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Outline

- The challenge
- The stated objective
- The Strategic Development Plan process timeline
- A suggested course of action
- Questions that come to mind
- Group discussion
The Challenge

Wei Li, Guangwen Xiao, Zefeng Wen, Xinhiao Xiao, Xuesong Jin
Southwest Jiaotong University
The Stated Objective

Create and implement a *Strategic Development Plan* that:

- specifies the long-term vision;
- defines the tasks and timeline;
- and determines the collaboration efforts required to

Develop an integrated model of railway vehicles and track capable of:

- accepting vehicle and track inputs;
- and providing relevant system performance and safety-related outputs.

**integrated**: adjective
1. combining or coordinating separate elements so as to provide a harmonious, interrelated whole.
2. organized or structured so that constituent units function cooperatively.
The SDP Process Timeline

• Create and begin to implement the SDP. (Year 1) *
• Continue to develop the sub-models. (Years 1 & 2) *
• Validate and refine the sub-models. (Year 3)
• Develop the integrated model. (Years 4 & 5)
• Validate and refine the integrated model. (Year 6)

* To be accomplished under current NURail funding.
A Suggested Course of Action

- Establish a NURail working group with sub-model leads.
- Develop and refine the overall vision for the project.
- Identify the current state of the art and practice from previous and current modeling efforts in the industry.
- Define the required inputs and desired outputs of the integrated model.
- Determine and refine the required project tasks and expected project timeline.
- Organize a series of workshops with team members and outside researchers to provide updates on and seek input for on-going research and development.
- Begin to use the integrated model.
Questions that come to mind

• What is the “state of the art and practice” in the industry?
  – the “As-Is Condition”

• What are the current strengths and weaknesses?
  – the “Needs Analysis”

• What do we desire or expect an integrated model to do?
  – the “Functional Requirements”

• Have we missed anything in the project definition?

• Is the suggested timeline reasonable and achievable?

• Will it be open source or proprietary?

• Who else should we involve or consult?
The floor is open for discussion ...