



Smart Roadside Initiative (SRI)

Smart Roadside Initiative NDMCA



Brenda Lantz
NDSU/UGPTI

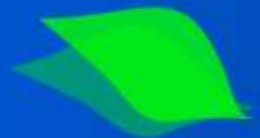
May 16-17, 2012





Agenda

- SRI Vision and Goals
- SRI Overview / Concept
- High-Level Project Schedule
- Specific Objectives
- Concept of Operations
 - Operating Scenarios
 - User Needs
 - Operational Constraints



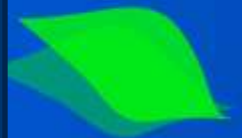


SRI Vision and Goals

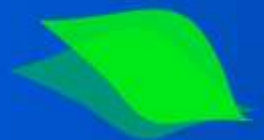
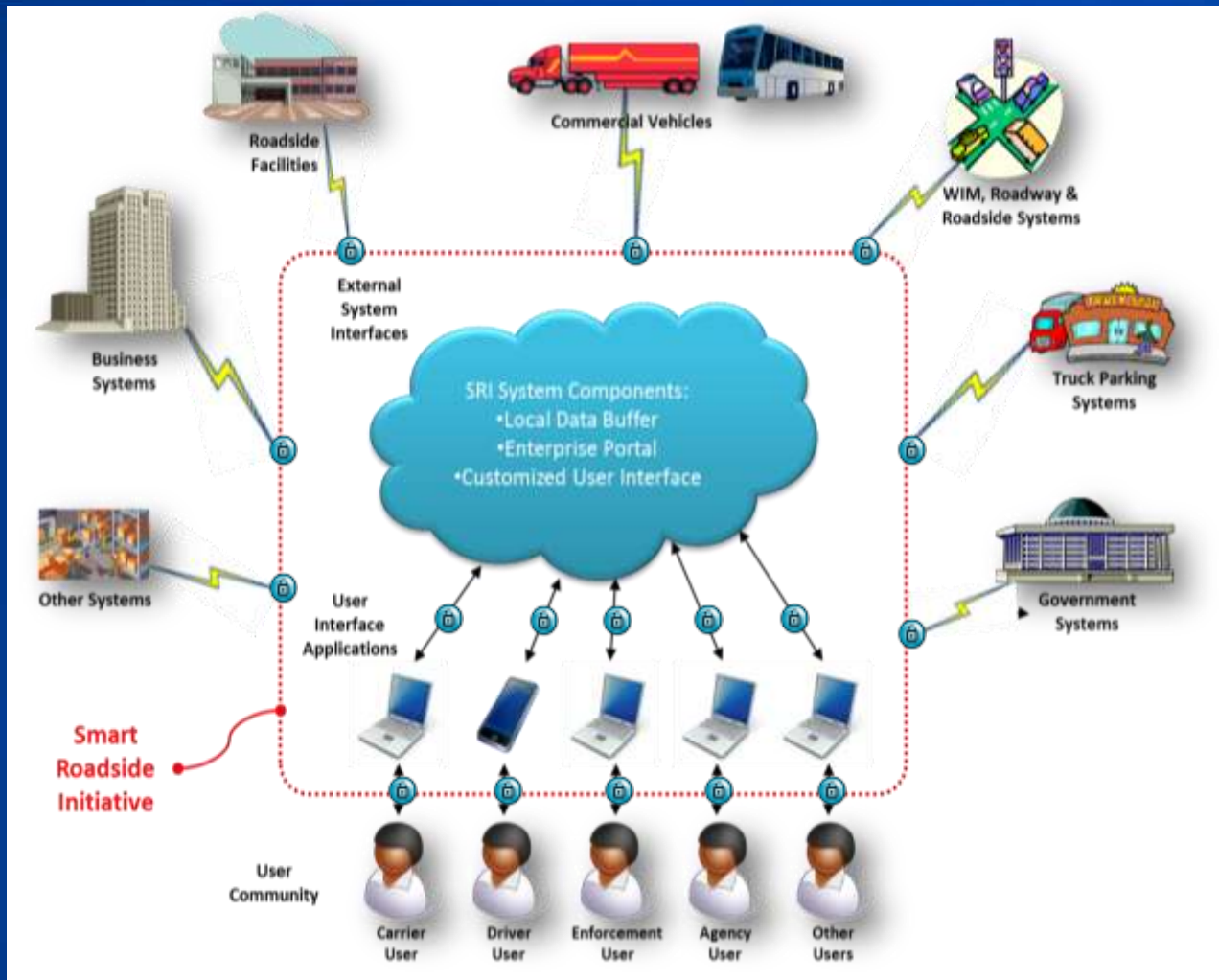
- Vision:
 - Commercial vehicles, motor carriers, enforcement resources, highway facilities, intermodal facilities, toll facilities, and other nodes on the transportation system collect data for their own purposes and *share the data seamlessly with the relevant parties, in order to improve motor carrier safety, security, operational efficiency, and freight mobility.*
- Goals:
 - *Build, install and test prototype of Smart Roadside Application(s)*
 - Enable data exchange between vehicle and roadside infrastructures which connect to authoritative databases for information and relevant data.

KEYS TO SUCCESS:

- ❖ Interoperable technologies
- ❖ Information sharing between vehicle-roadside-freight facility systems
- ❖ Leveraging current technology investments and existing partnerships
- ❖ Validating prototype needs, requirements and design with key stakeholders

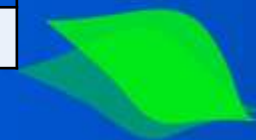


SRI Overview



Project Schedule

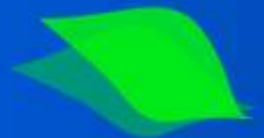
Activity	Completion Date
Project and Systems Engineering Management	Ongoing
Stakeholder Outreach	Ongoing
Applications Assessment of Deployed Systems	October 2011
Applications Assessment of Research Projects	October 2011
SRI Concept of Operations	May 2012
SRI System Requirements	August 2012
SRI System Architecture	August 2012
SRI Component-Level Design	October 2012
SRI Development and Testing	February 2013
SRI Build and Install	April 2013
SRI Prototype Testing	April – May 2013
SRI Final Documentation	June 2013





SRI Objectives

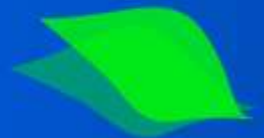
1. **A significant increase in the number of high-quality safety assessments** to encourage safer commercial vehicle operations without requiring additional commercial vehicle inspection staff;
2. **Use of additional data to feed carrier safety ratings;**
3. **A larger number of inspection and screening events to improve relationship of the safety score with the propensity for safe commercial vehicle operations;**
4. **System-wide operating cost reduction for both carrier and enforcement entities, and mobility improvement for carriers.** (A larger number of vehicles and drivers can be evaluated without stopping); and
5. **Enhanced infrastructure preservation by increasing the frequency of size and weight screening and inspection events, without introducing travel delays for compliant vehicles.**





Prototype Capabilities

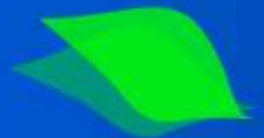
- Concept of Operations – planned capabilities:
 - Identifying Entities on the Road
 - Sharing Information—establishing a common framework
 - Enhanced Electronic Screening—attended and unattended
 - Integrating Public- and Private-Sector Data
 - Streamlined/Accelerated Inspections—Wireless Roadside Inspections and traditional inspections



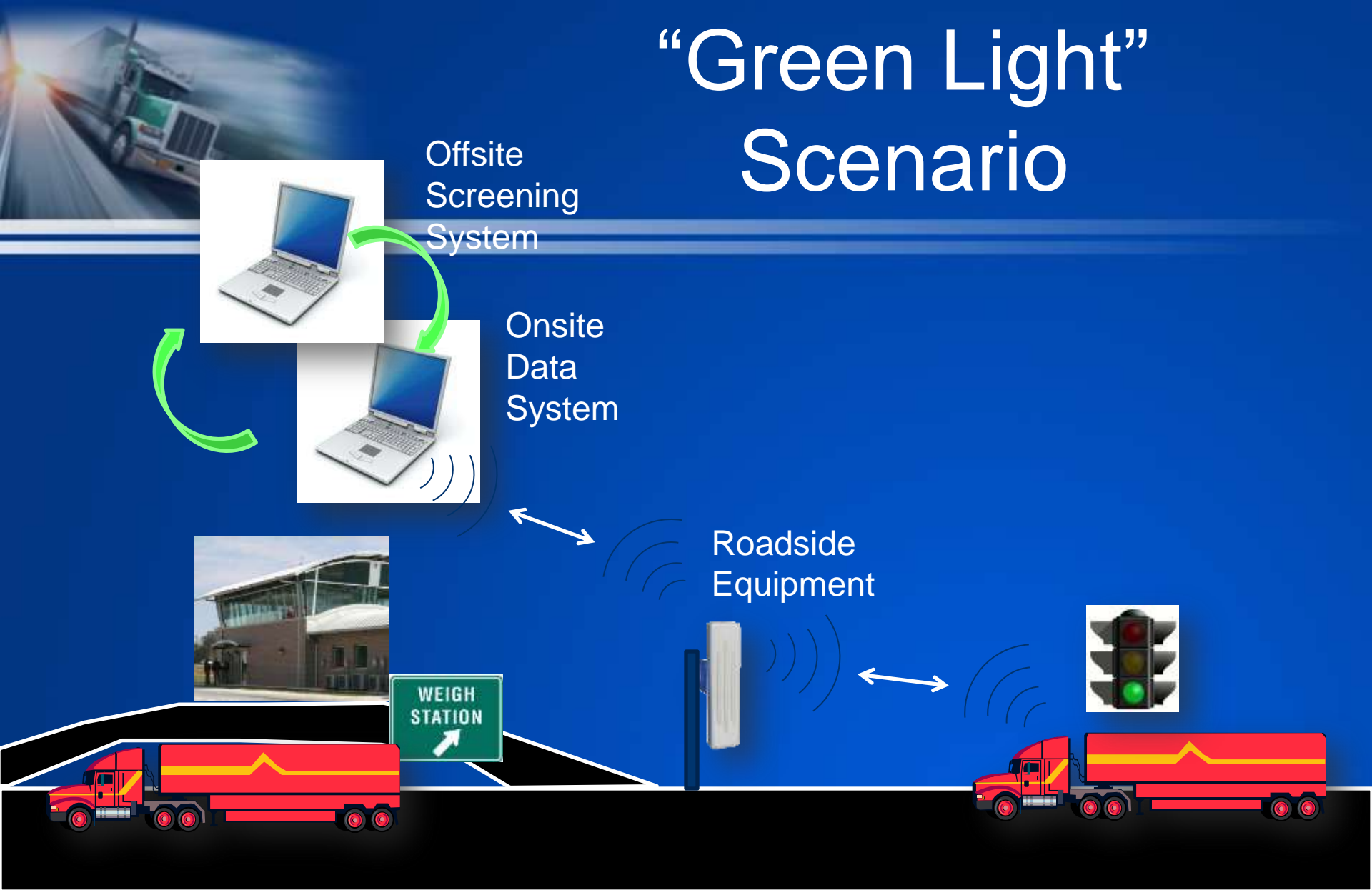


Scenarios

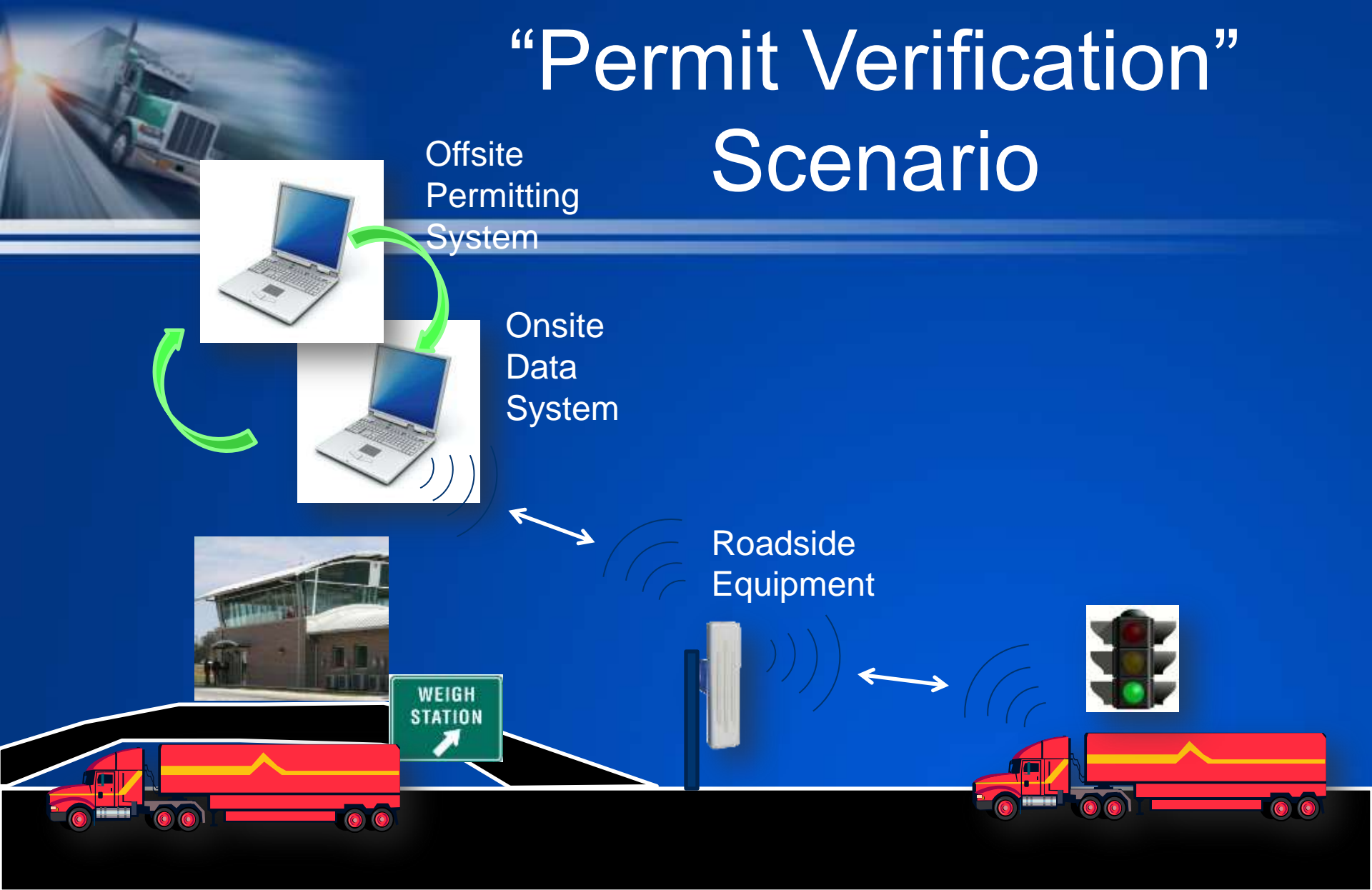
- Questions
 - Is the sequence of events consistent with how members of the trucking industry think the SRI system should work?
 - Is it clear how the SRI system will improve the process?



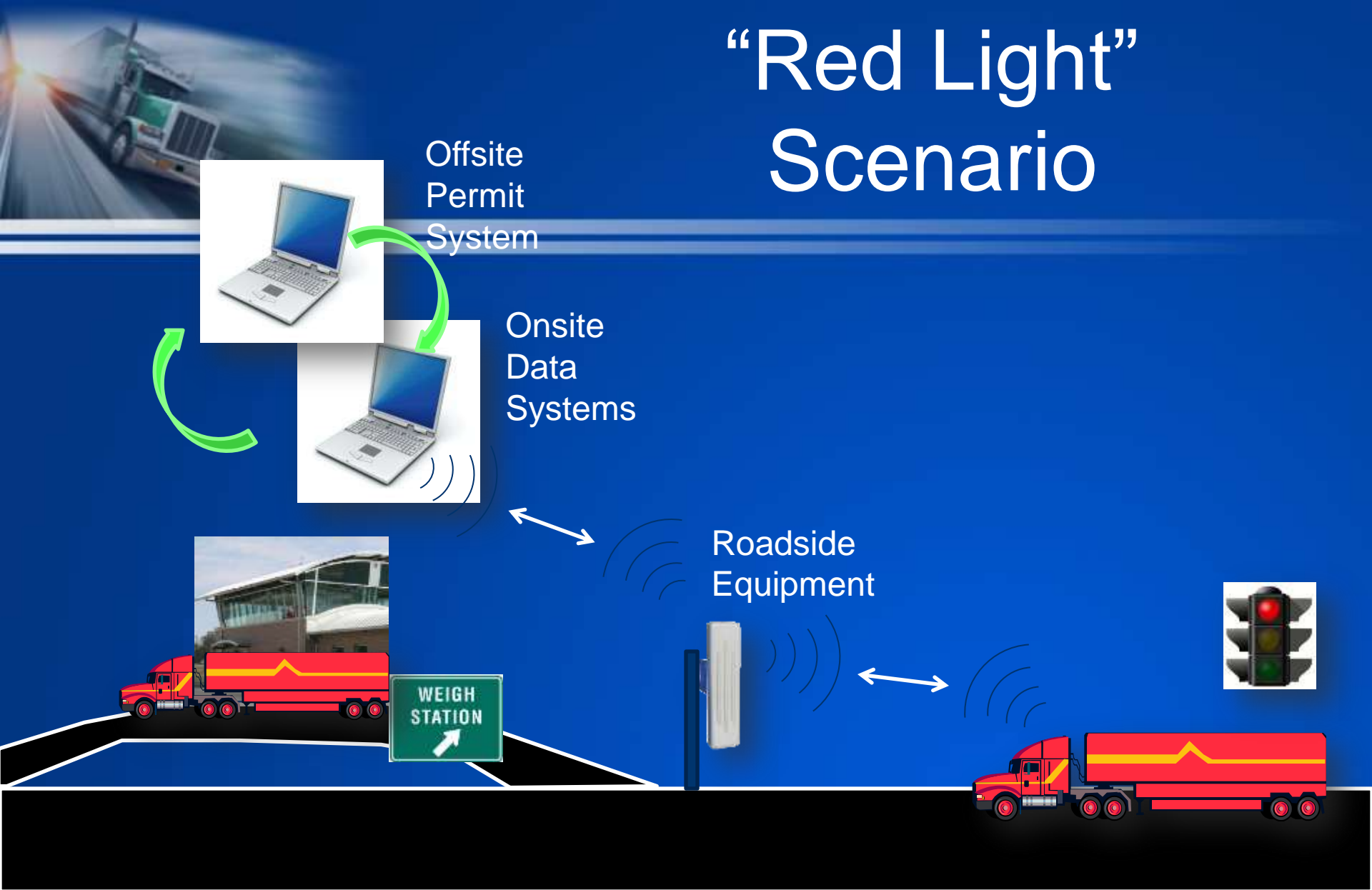
“Green Light” Scenario



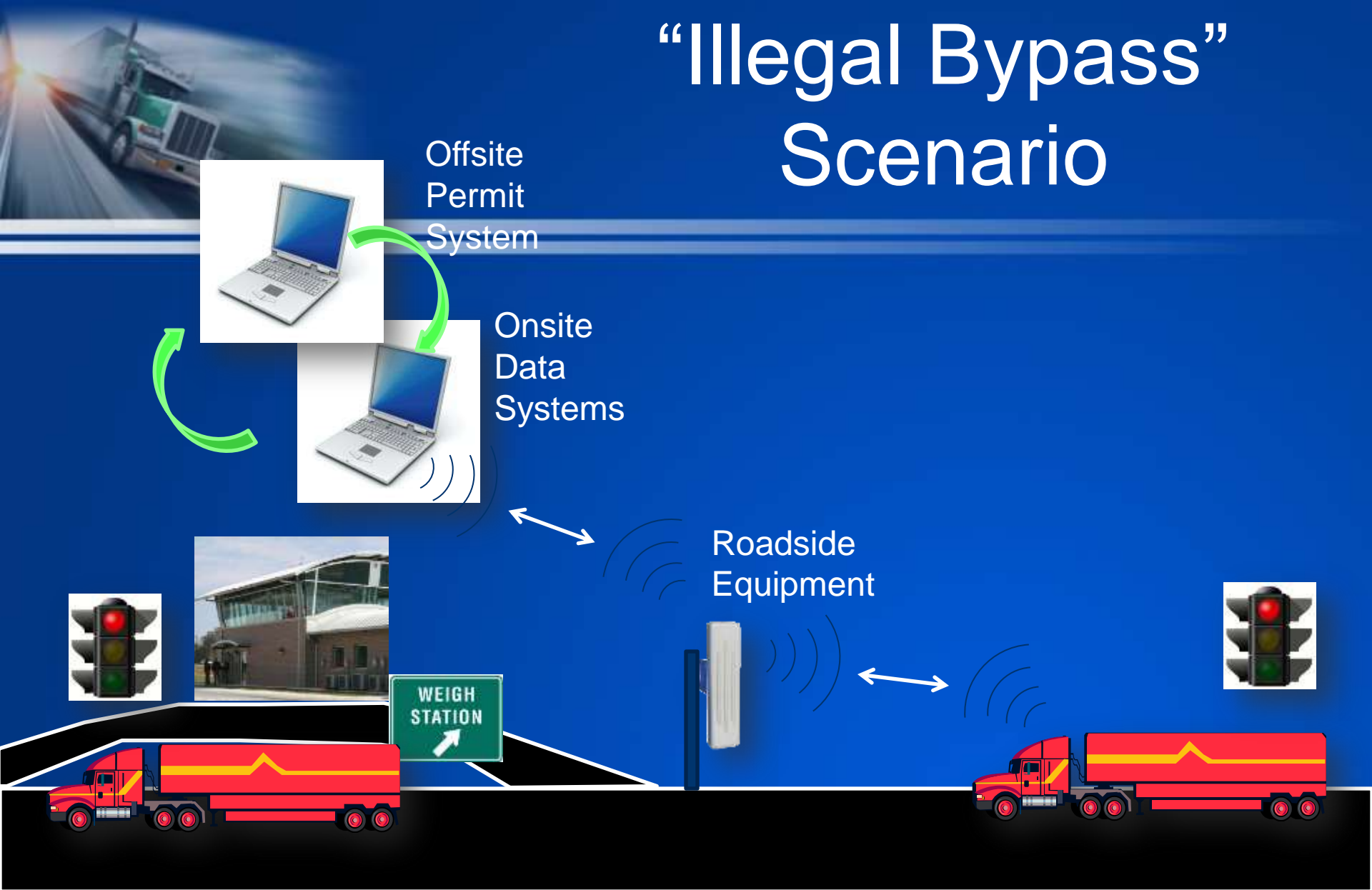
“Permit Verification” Scenario



“Red Light” Scenario



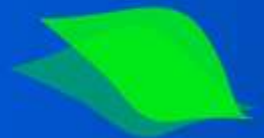
“Illegal Bypass” Scenario





Scenarios

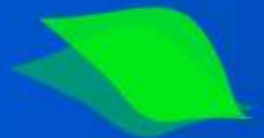
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User Needs

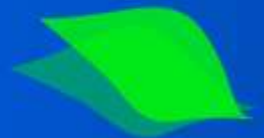
- Questions
 - Does the need capture a desired capability?
 - Is the reason for the need understood?





User Needs

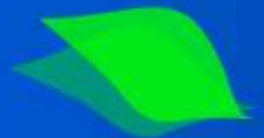
- The system must be able to identify commercial vehicle (CV) power units uniquely.
- The system must support the exchange of data between the CMV and the roadside without requiring the vehicle to stop.
- The system must provide the ability to pass data collected from CMV to external systems.
- The system must provide the ability to receive data from external systems.
- The system must provide the ability to efficiently and effectively exchange data between external systems and local users at the roadside or in the CMV.





User Needs (cont.)

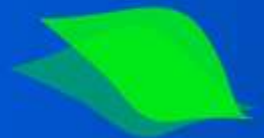
- The system must provide protection against unauthorized access to and use of data.
- The system must allow a vehicle operator to interact with it in a safe manner during vehicle operation.
- The system must include functionality that meets specific CMV operations needs.
- The system must be able to uniquely and reliably identify which commercial vehicle driver is actually operating a commercial vehicle.
- The system must be able to support the identification of trailing equipment pulled by uniquely identifiable CMV power units.





User Needs

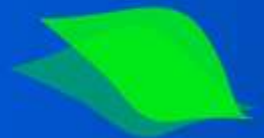
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Operational Constraints

- Questions
 - Do they seem appropriate?
 - Do any present problems for your organization?
 - Are additional constraints needed?





Operational Constraints

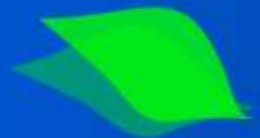
- DOC01 – Driver distraction is a significant concern to USDOT and has been shown to compromise highway safety. The SRI Prototype test must ensure that no component or method deployed within the SRI framework will promote the implementation of any system, device, or practice that will result in unsafe operation of a commercial motor vehicle by distracting the driver.
- DOC02 – Motor carrier participation is reliant on systems, staff, and procedures not compromising business sensitive information, and encryption tools and standards must be applied to meet the appropriate legal and business requirements. The SRI Prototype must test security applications to ensure that proprietary data on motor carrier operation meets legal and business requirements.





Operational Constraints

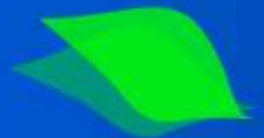
- DOC03 – The component carrier, vehicle, and driver identifiers for use by SRI for both interstate and intrastate operators are not at present established in statute or regulation. The SRI Prototype test must identify a suitable set of unique identifiers for intrastate carriers included in the test that enables the identification of the motor carrier, driver, and vehicle.





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Points of Contact

SAIC PI:

Ron Schaefer

618-567-0309

schaeferl@saic.com

NDSU/UGPTI:

Brenda Lantz

720-238-0070

brenda.lantz@ndsu.edu

USDOT:

Tom Kearney, FHWA

518-431-4125 x218

tom.kearney@dot.gov

USDOT:

Chris Flanigan

202-385-2384

chris.flanigan@dot.gov

www.smartroadsideinitiative.com

