Intelligent

Paving Products
MMGPS and LPS HMA Paving
P-63 Millimeter Paving
Paver LPS Option
Intelligent Compaction process

- Monitor Pass count
- Maintain Roller Patterns
- Monitor Stiffness and Temperature
- Increase Productivity
- Improvement Process
- Generate Inspection Reports
The Stiffness indicator is a representation of the ICMV values in real time.

- Customizable display items
- It allows for quick At-A-Glance information about the materials compaction properties.
Competition – CAT

- Primarily Trimble equipment.
- Uses a machine integrated sensor to measure drive resistance.
Compaction kit

- MC-i4
  - GNSS included
  - Radio included (DUHF / FH915
  - Cell included (Sitelink)
- Display
  - GX-55
  - GX-75
- Sensor kit
  - IR temperature sensors
  - Accelerometer
OEM CAN Options

- **BOMAG**
- **HAMM**
- **SAKAI**
Thermal Mapping
Why Thermal Mapping?

- Temperature segregation is prelude to future problem
- Measuring and visualizing it gives insight
- This insight may result in damage control for now or later
Thermal Profiling
## Comparison of Temperature Segregation

<table>
<thead>
<tr>
<th>Percentage of Sublots, %</th>
<th>Low</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>End Dump (08/13/13)</strong></td>
<td>32</td>
<td>68</td>
<td>0</td>
</tr>
<tr>
<td><strong>Pickup Machine (10/12/13)</strong></td>
<td>42</td>
<td>56</td>
<td>2</td>
</tr>
<tr>
<td><strong>Material Transfer Device (10/12/13)</strong></td>
<td>27</td>
<td>64</td>
<td>9</td>
</tr>
</tbody>
</table>

*Images show different machines used for the comparison.*
SHRP2 (R06C) GPR RDM DP

- GPR Dielectric Values and Thermal Imaging Profile
PaveLink  Real Time Data Sharing
Landing page – project progress overview

Project progress

Project locations
Real-time updates

Progress tracking; web & app

Reports on production, logistics, and construction

Analysis
SmoothRide Road Maintenance
3D Milling and Paving
With SmoothRide
Paving Opportunities
Project Dependent

Smoothness
Incentives and disincentives

Material Management
Quantity versus surface

Unknown Situation
Surface data and change orders
SmoothRide

Time  Safety  Quality  Cost
Point cloud
Design surface

Real-Time Volume Data
RD-MC Milling & Paving
RD-MC Milling & Paving
Thank you.