



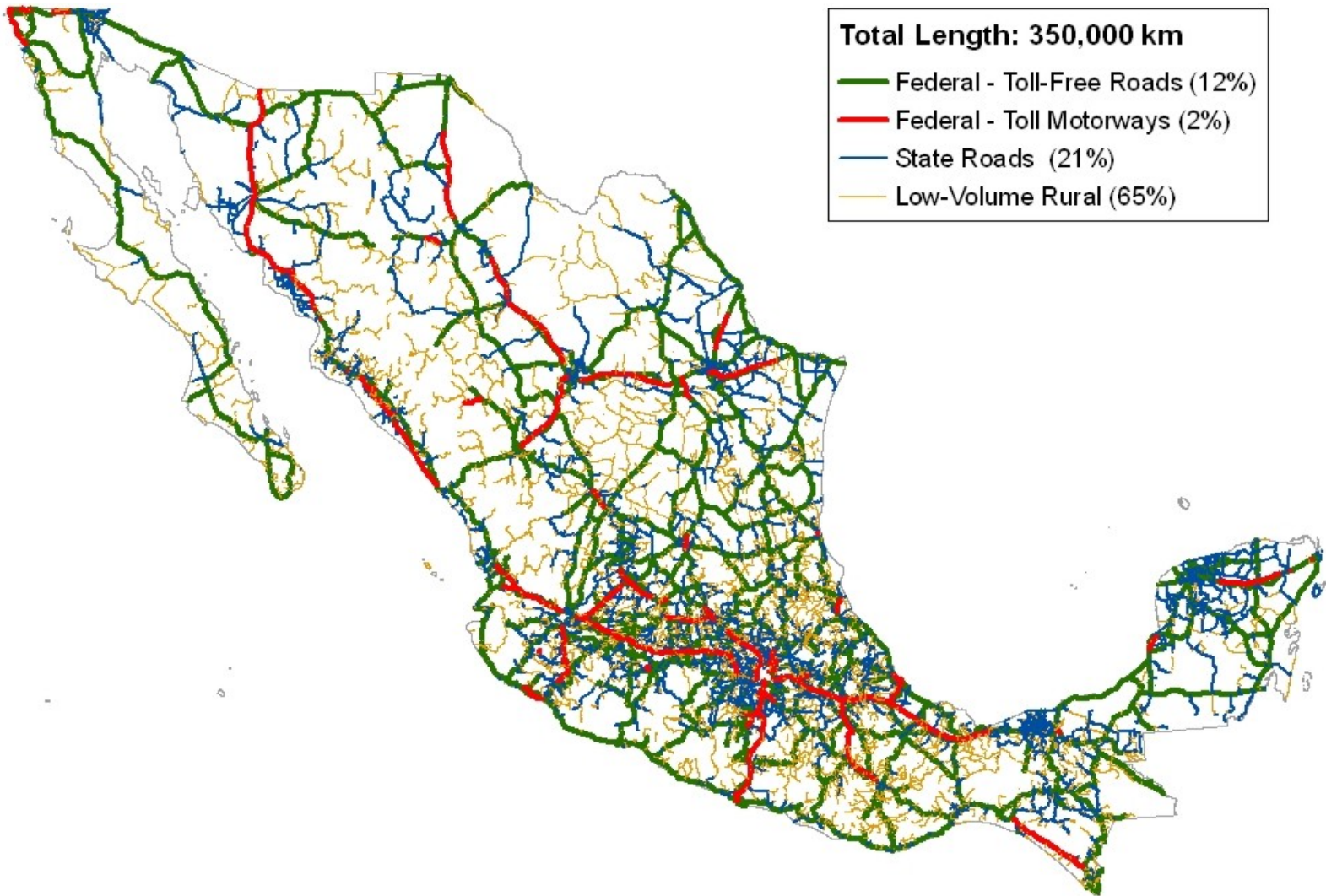
ST4 Session: Mexico – National Report

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- Researcher
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Mexican Road Network



Road Management Systems in Mexico

Transport and Communications Ministry (SCT)

- Operates the federal toll-free network.
- Has been using PMS for almost 15 years.
- Has started using an HDM-4-based PMS.
- Has in place systems for managing bridges, accidents and traffic information.



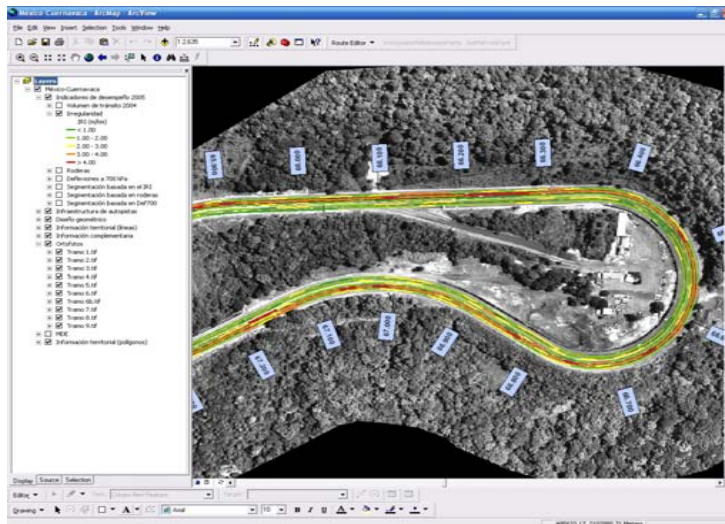
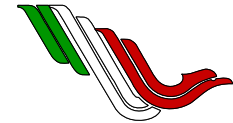
SISTER

HDM-4
HIGHWAY DEVELOPMENT & MANAGEMENT

Road Management Systems in Mexico

Federal toll-roads operator CAPUFE

- ➔ Is developing jointly with the IMT a PMS based on HDM-4 and GIS.
- ➔ Is requiring the application of HDM-4 for justifying maintenance projects.



GIS INTERFACE

Description	Pavement Type	Length (km)	Traffic Flow	Climate Zone	MT AADT
STC1, km. 33+000 al 34+800	Asphalt Mix on Asphalt Pavement	1.8	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	16173.00
STC1, km. 34+800 al 36+800	Asphalt Mix on Asphalt Pavement	2.0	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	16173.00
STC1, km. 43+010 al 44+850	Asphalt Mix on Asphalt Pavement	1.8	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 64.80	16173.00
STC1, km. 44+850 al 46+800	Asphalt Mix on Asphalt Pavement	2.0	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 64.80	16173.00
STC1, km. 46+800 al 51+380	Asphalt Mix on Asphalt Pavement	4.6	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 64.80	16173.00
STC1, km. 51+380 al 53+630	Asphalt Mix on Asphalt Pavement	2.2	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 64.80	16173.00
STC1, km. 53+630 al 54+660	Asphalt Mix on Asphalt Pavement	1.1	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	16173.00
STC1, km. 56+000 al 60+000	Asphalt Mix on Asphalt Pavement	3.2	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	16134.00
STC1, km. 60+000 al 61+300	Asphalt Mix on Asphalt Pavement	1.3	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	14328.00
STC1, km. 72+598 al 74+480	Asphalt Mix on Asphalt Pavement	1.9	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 64.80	11104.00
STC1, km. 76+700 al 77+700	Asphalt Mix on Asphalt Pavement	1.0	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 64.80	11104.00
STC1, km. 82+000 al 83+750	Asphalt Mix on Asphalt Pavement	1.8	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 64.80	11104.00
STC1, km. 86+000 al 89+100	Asphalt Mix on Asphalt Pavement	2.1	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 64.80	9697.00
STC1, km. 89+100 al 89+900	Asphalt Mix on Asphalt Pavement	1.8	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 64.80	9697.00
STC1, km. 89+900 al 91+050	Asphalt Mix on Asphalt Pavement	1.2	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 64.80	9697.00
STC1, km. 94+000 al 95+570	Asphalt Mix on Asphalt Pavement	1.2	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 64.80	9697.00
STC1, km. 95+570 al 96+600	Asphalt Mix on Asphalt Pavement	1.0	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	9697.00
STC1, km. 96+600 al 99+400	Asphalt Mix on Asphalt Pavement	2.8	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	9697.00
STC1, km. 99+400 al 102+106	Asphalt Mix on Asphalt Pavement	2.7	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	9697.00
STC1, km. 102+106 al 103+302	Asphalt Mix on Asphalt Pavement	1.2	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	9697.00
STC1, km. 103+302 al 104+450	Asphalt Mix on Asphalt Pavement	1.2	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	9697.00
STC1, km. 104+450 al 105+000	Asphalt Mix on Asphalt Pavement	1.6	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	9697.00
STC1, km. 105+000 al 107+000	Asphalt Mix on Asphalt Pavement	1.0	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	9697.00
STC1, km. 107+000 al 108+700	Asphalt Mix on Asphalt Pavement	1.8	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	9697.00
STC1, km. 116+740 al 118+100	Asphalt Mix on Asphalt Pavement	1.4	One-way downhill	C(w)IvJa Subhmedo-Subtropical Fio PPM = 73.65	9697.00

HDM-4 NETWORK

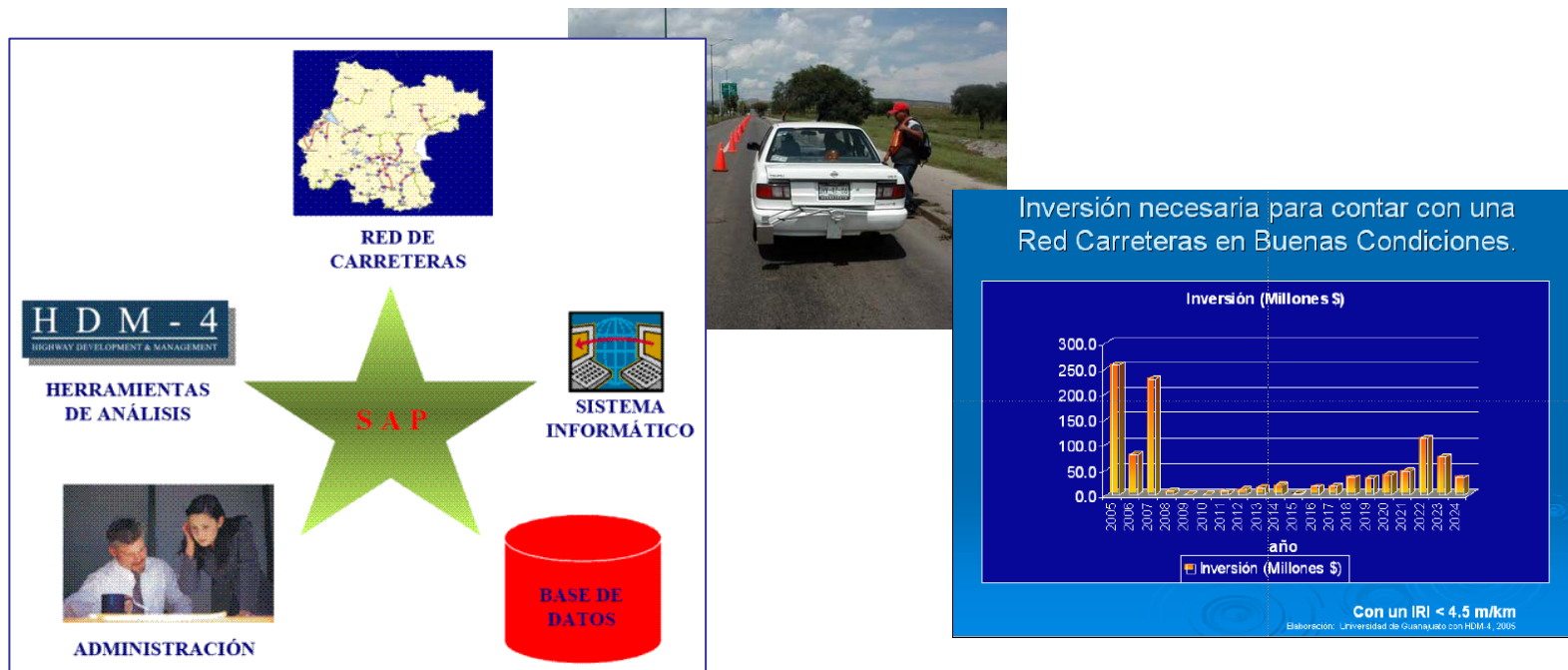
Road Management Systems in Mexico

State and Local Agencies

- Have shown interest in deploying systems.
- Few of them have systems or projects in place.



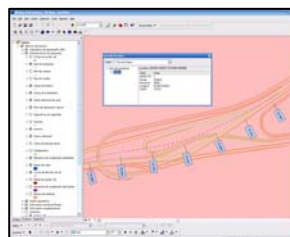
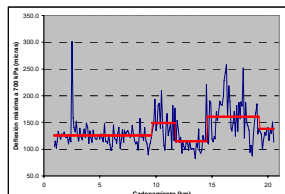
GUANAJUATO STATE PMS



IMT Contribution

Mexican Transport Institute (IMT)

- Has developed methodologies and software for pavement, bridge, accident and risk management.
- Conducts research in various topics related to road evaluation and management.
- Promotes the adoption of the asset management approach.
- Provides consultancy services on road management systems.
- Has been offering a wide range of training activities.



Use of High Performance Equipment

Equipment in use

- Laser profilometers.
- Falling weight deflectometers.
- Vehicle-mounted cameras for distress assessment.
- Ground penetrating radars.



Use of High Performance Equipment

Some key facts

- Availability is increasing but still marginal when compared to potential demand.
- No standard procedures have been officially adopted for calibrating or verifying equipment.



Managers Survey

Topics covered

- Data being collected.
- Systems in use.
- Relevance attributed to information and systems.
- Implications of management systems for the organization.

No. DE FOL : 27 SEP. 2006 10:00:04 P2

XXIII CONGRESO MUNDIAL DE CARRETERAS

REPORTE NACIONAL - MEXICO
SESIÓN DE ORIENTACIÓN ESTRATÉGICA STA
SESIÓN DE DATOS TÉCNICOS PARA LA TOMA DE DECISIONES
CUESTIONARIO PARA DIRECTIVOS

Nombre: En. Israel Hernández
Organización: Secretaría de Transportes y Comunicaciones
Cargo: Director General de Carreteras STC

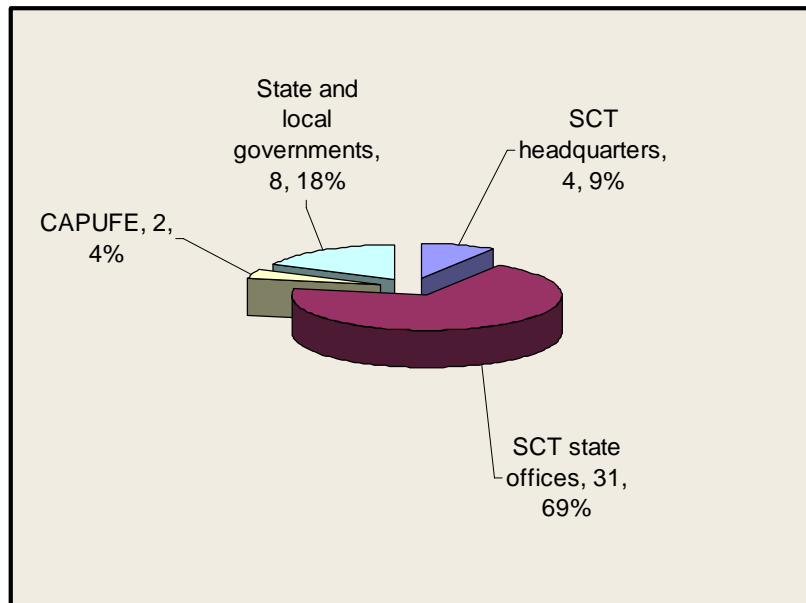
1. ¿Su organización recibe periódicamente información sobre el estado físico de la infraestructura carretera que administra?
 Sí:
 De pavimentos, puentes y otros componentes
 De pavimentos, puentes y otros componentes
 No

2. En el caso de que su organización reciba información sobre la condición de los pavimentos, por favor especifique cuál:
 Impulsiones (pulpidos)
 Delimitaciones de las capas
 Deflexiones
 Otros

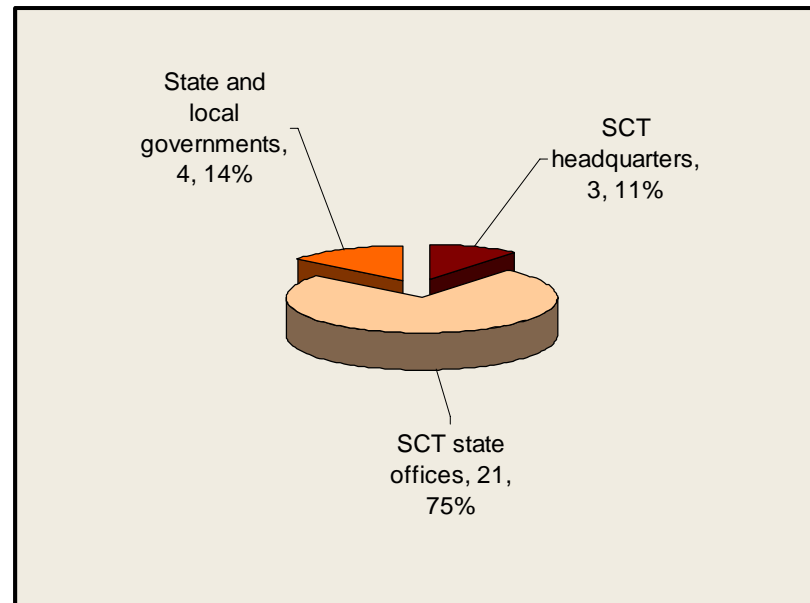
3. ¿La información sobre el estado de la infraestructura carretera como de decisiones nacionales con su conservación y mantenimiento?
 Sí
 No

Inquired Officials

Questionnaires sent: 45

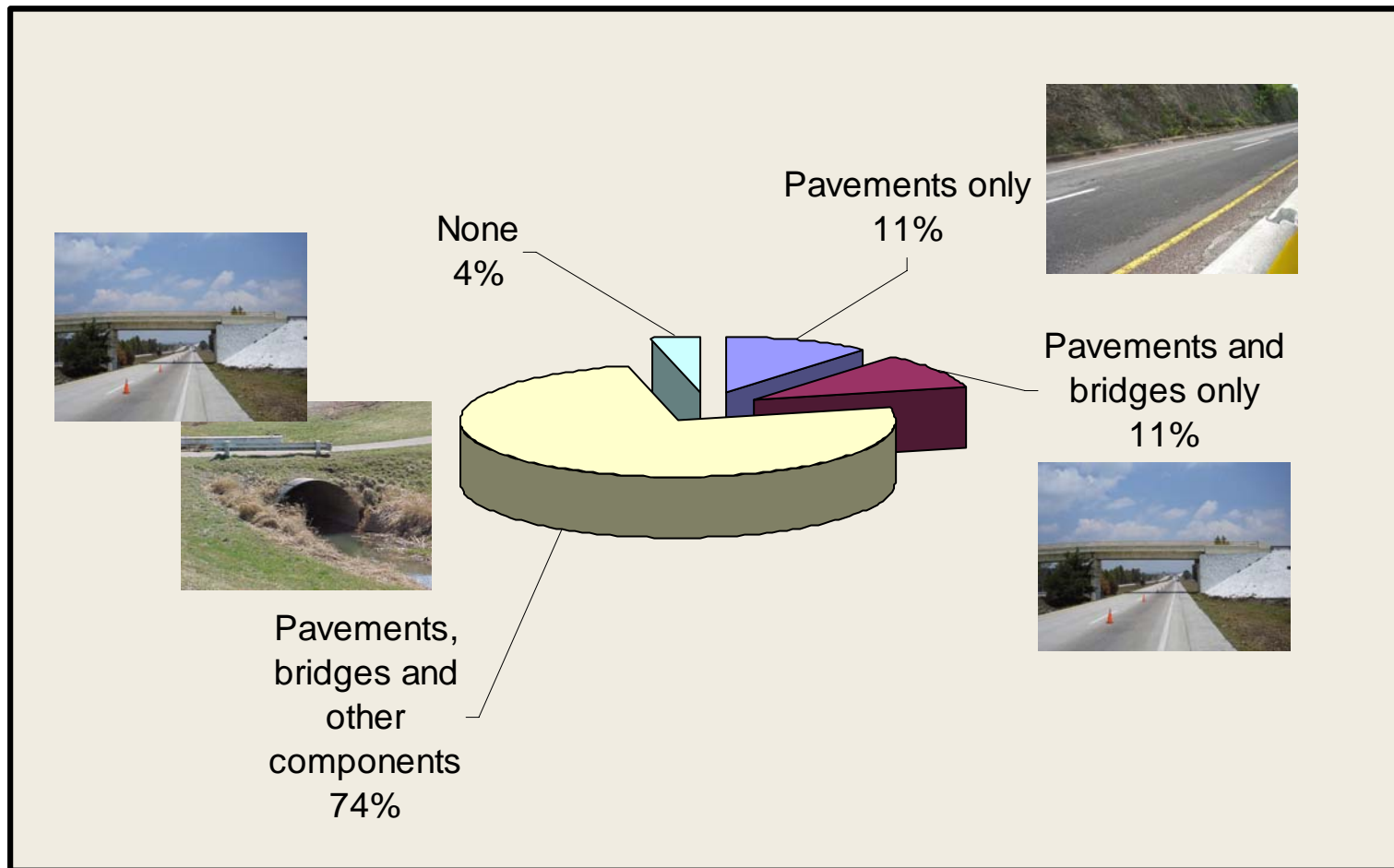


Questionnaires answered: 28



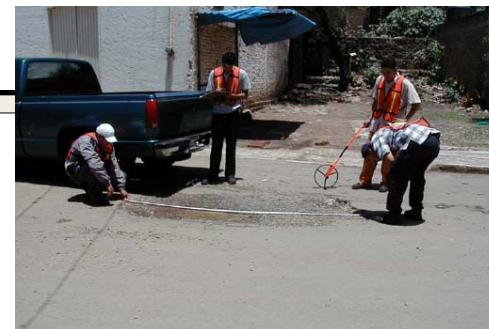
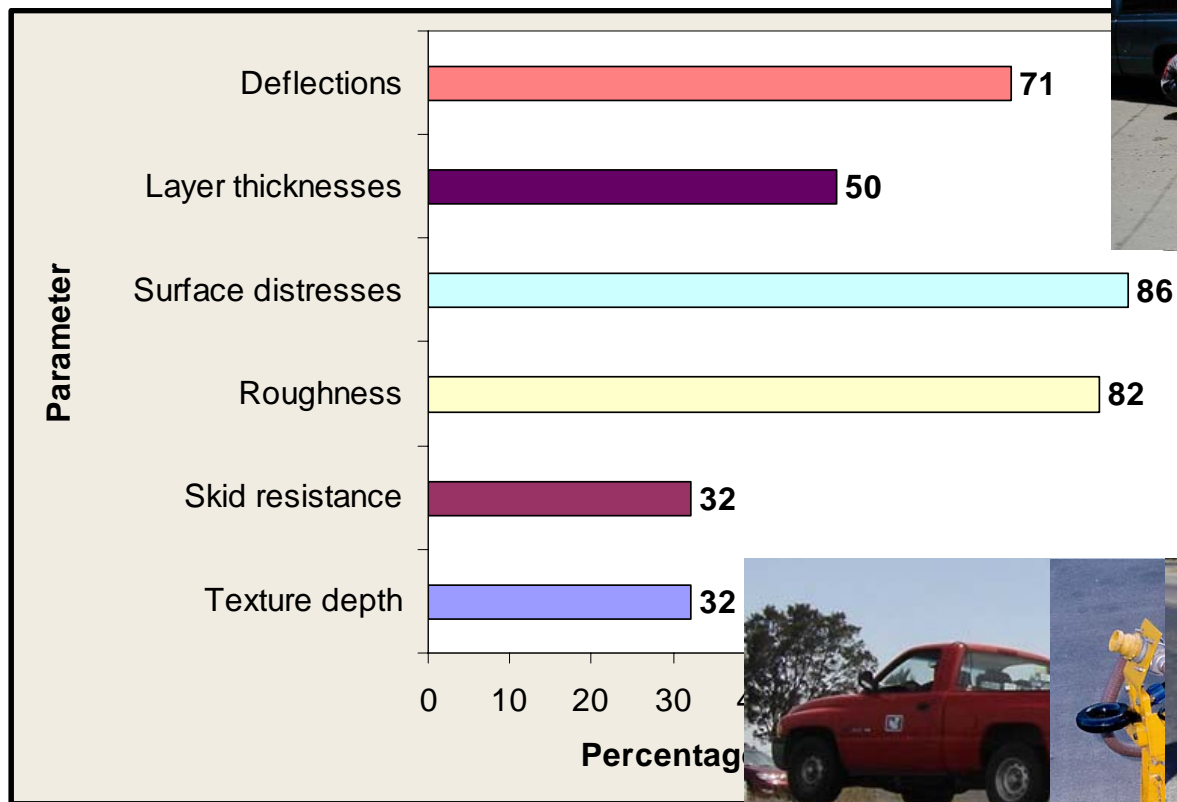
Issues Related to Information Being Collected

Road components involved



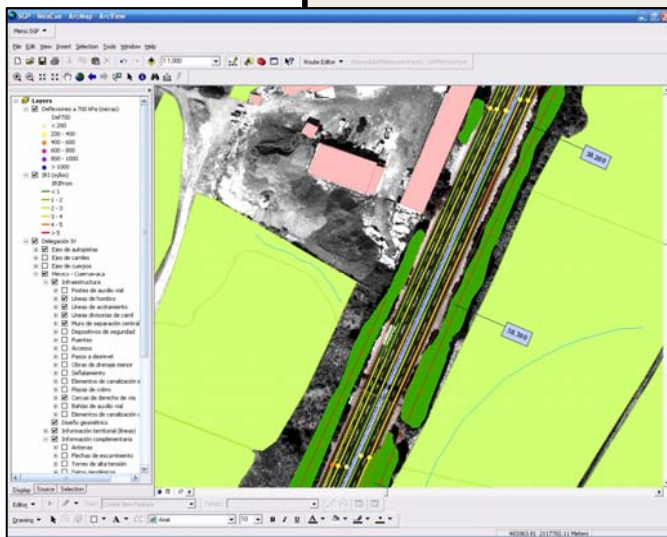
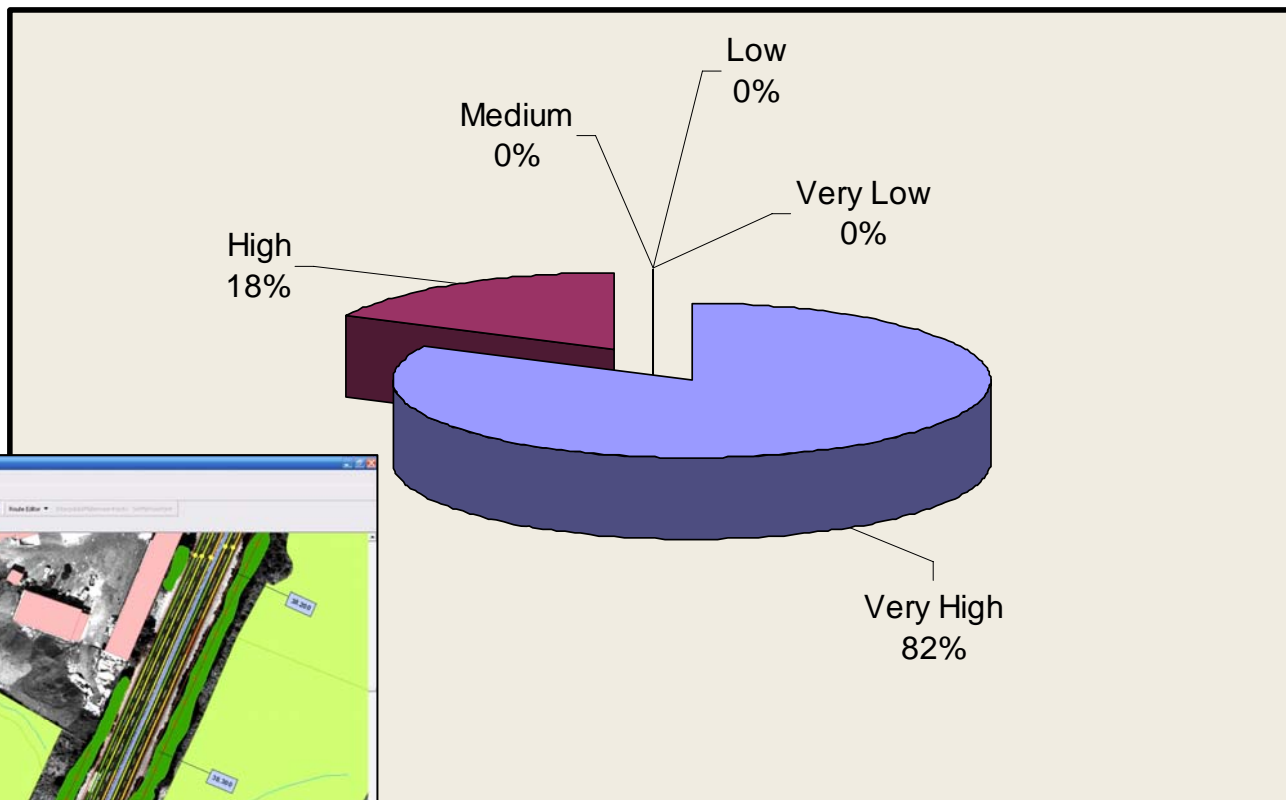
Issues Related to Information Being Collected

Indicators of pavement condition being measured



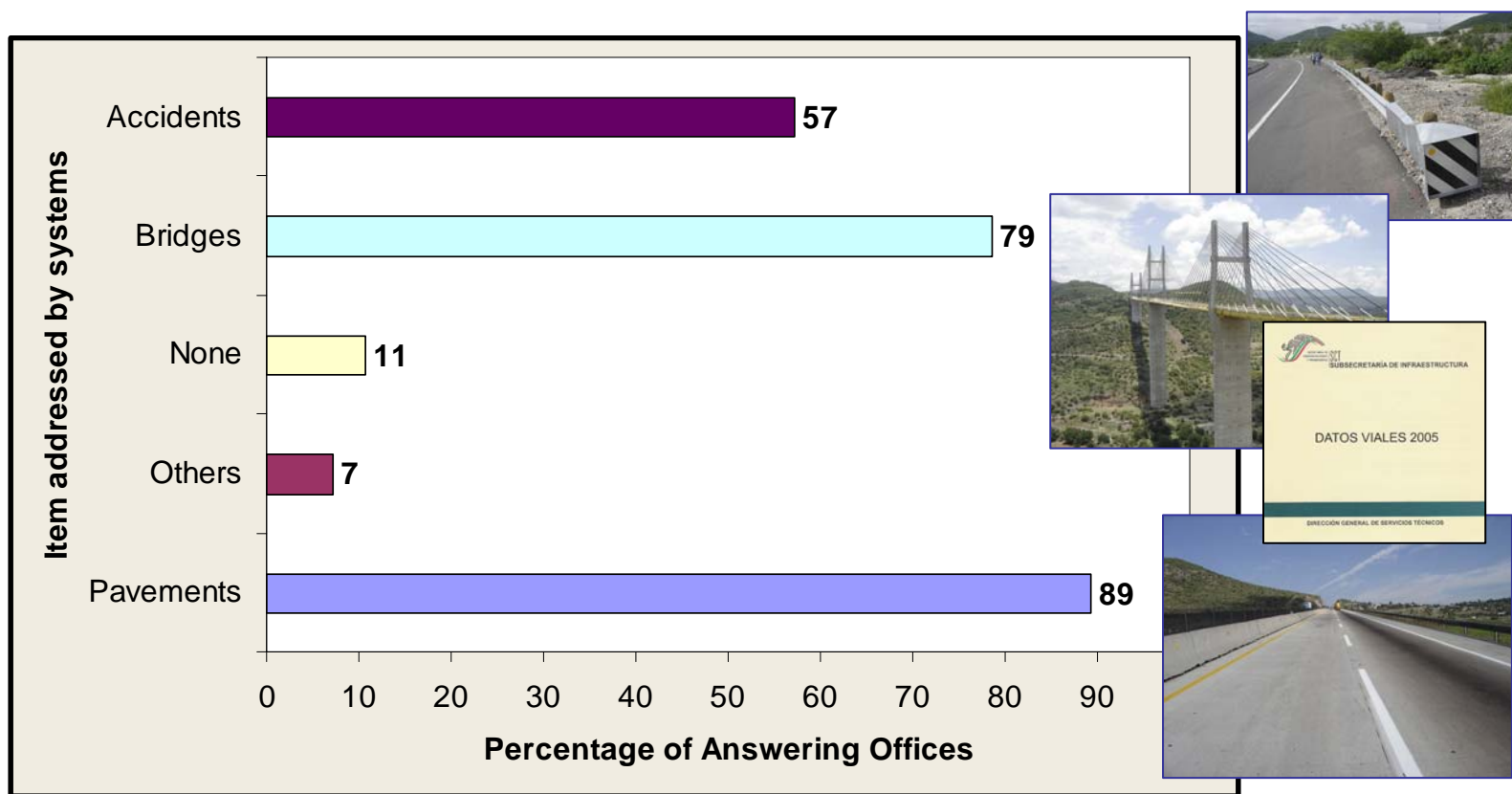
Issues Related to Information Being Collected

Relevance attributed to information



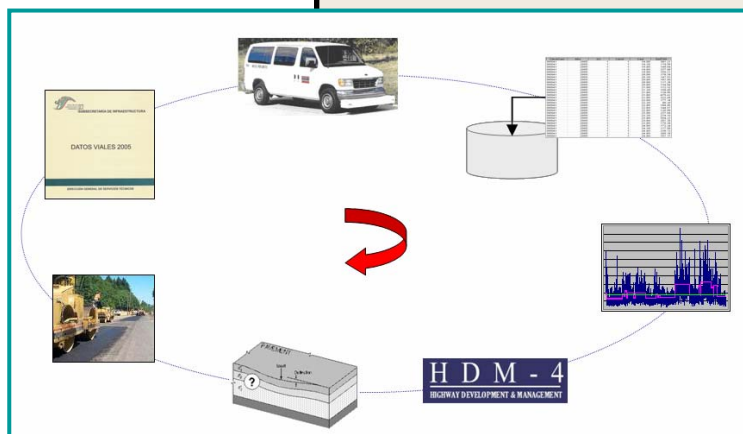
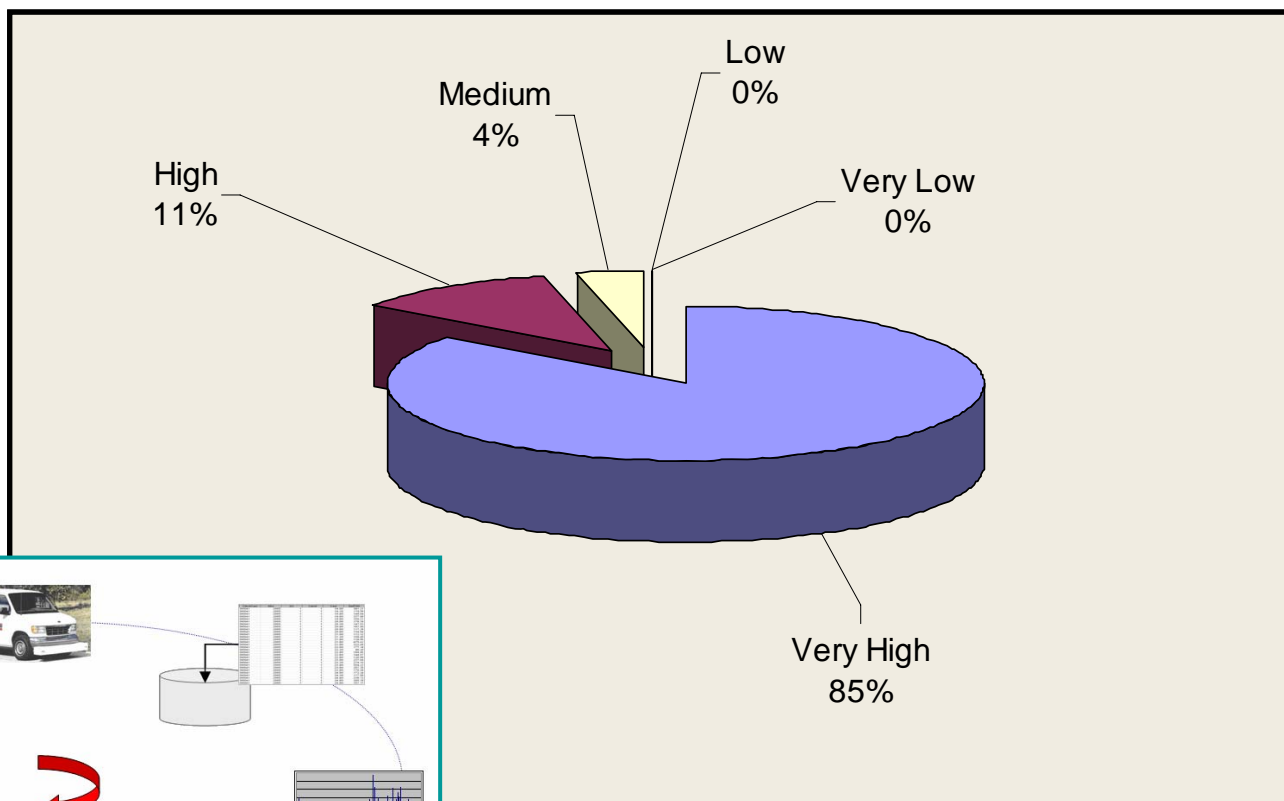
Perceptions on Asset Management Systems

Systems in operation



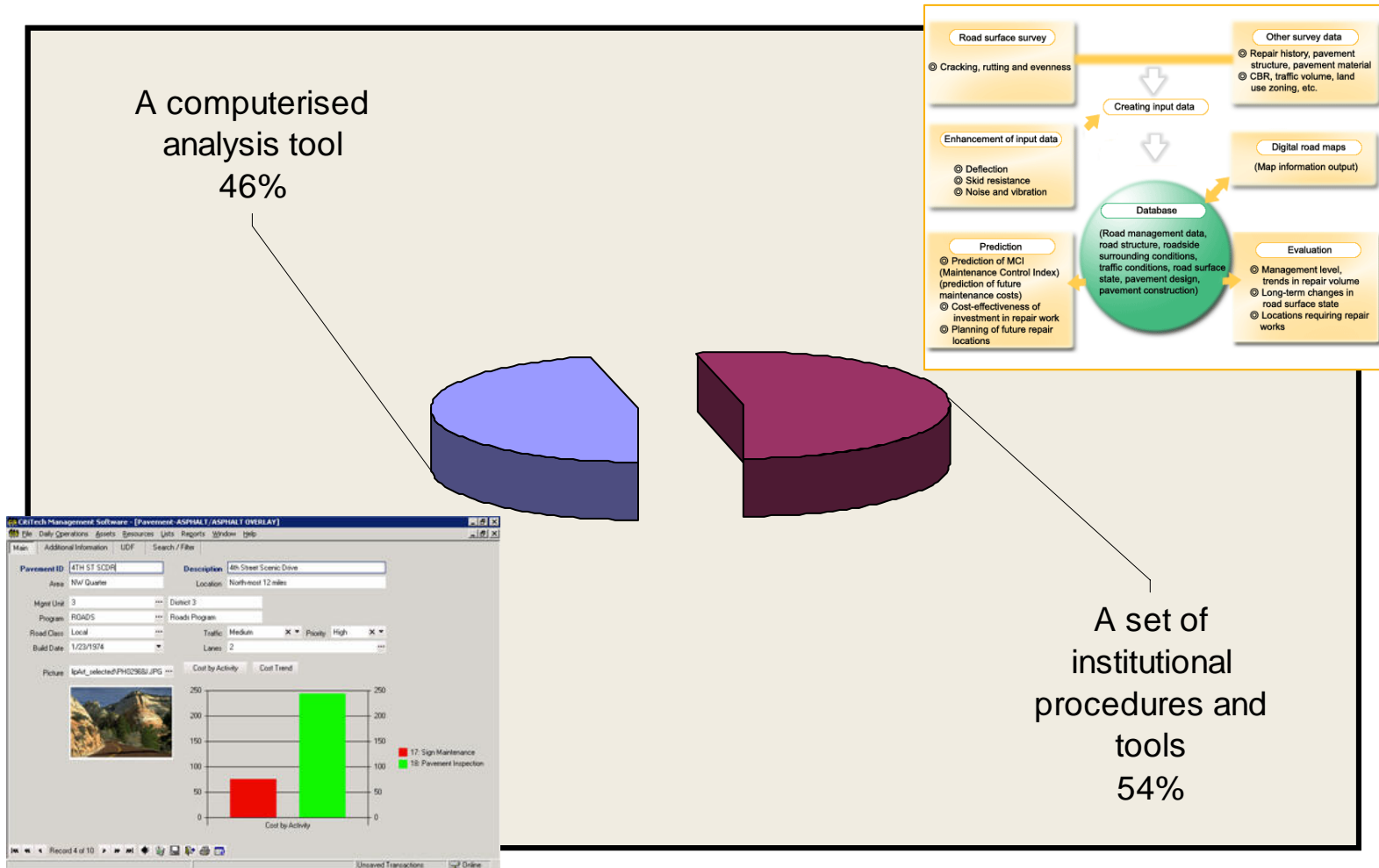
Perceptions on Asset Management Systems

Priority assigned to system implementation



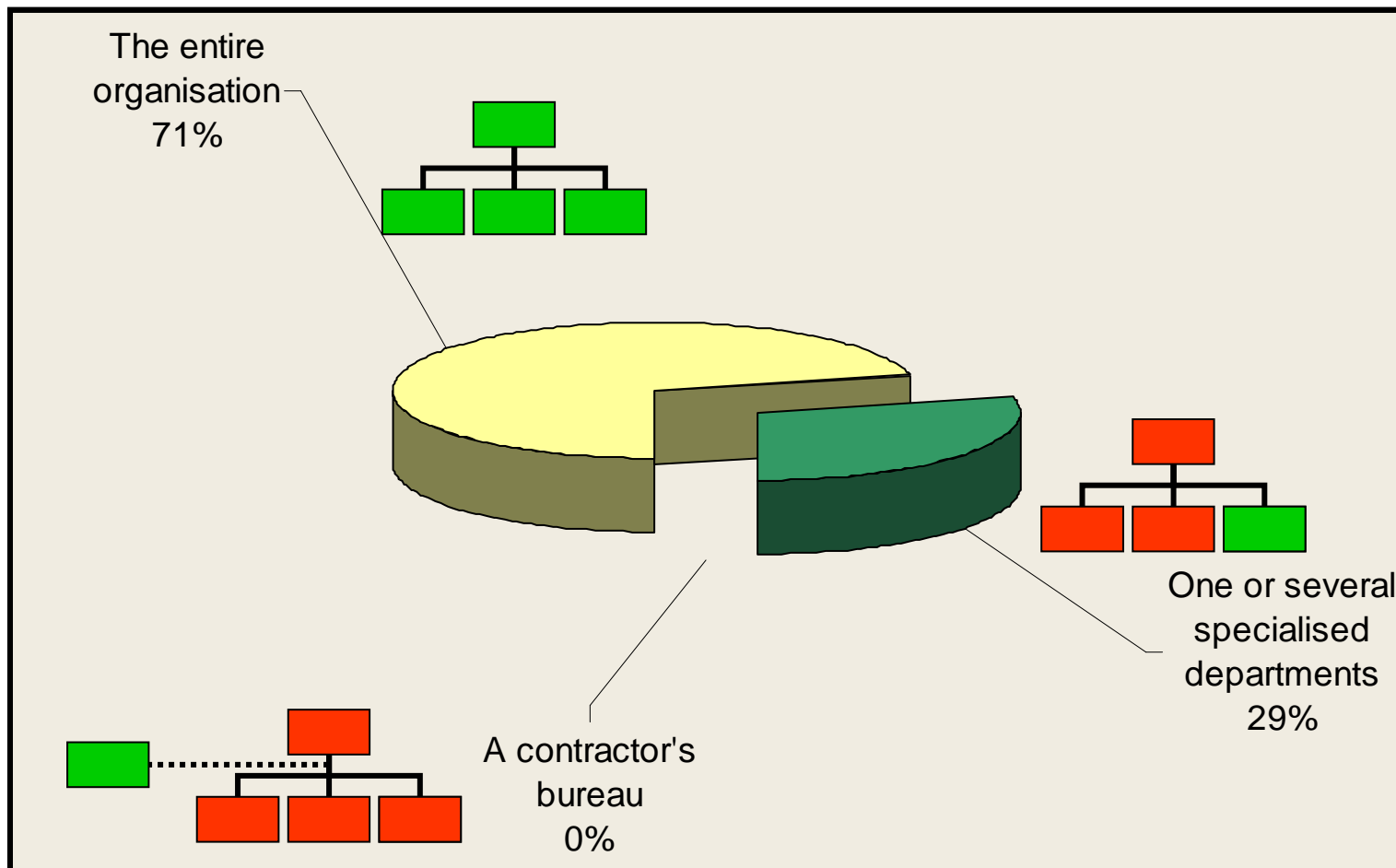
Perceptions on Asset Management Systems

Selected definition of a PMS



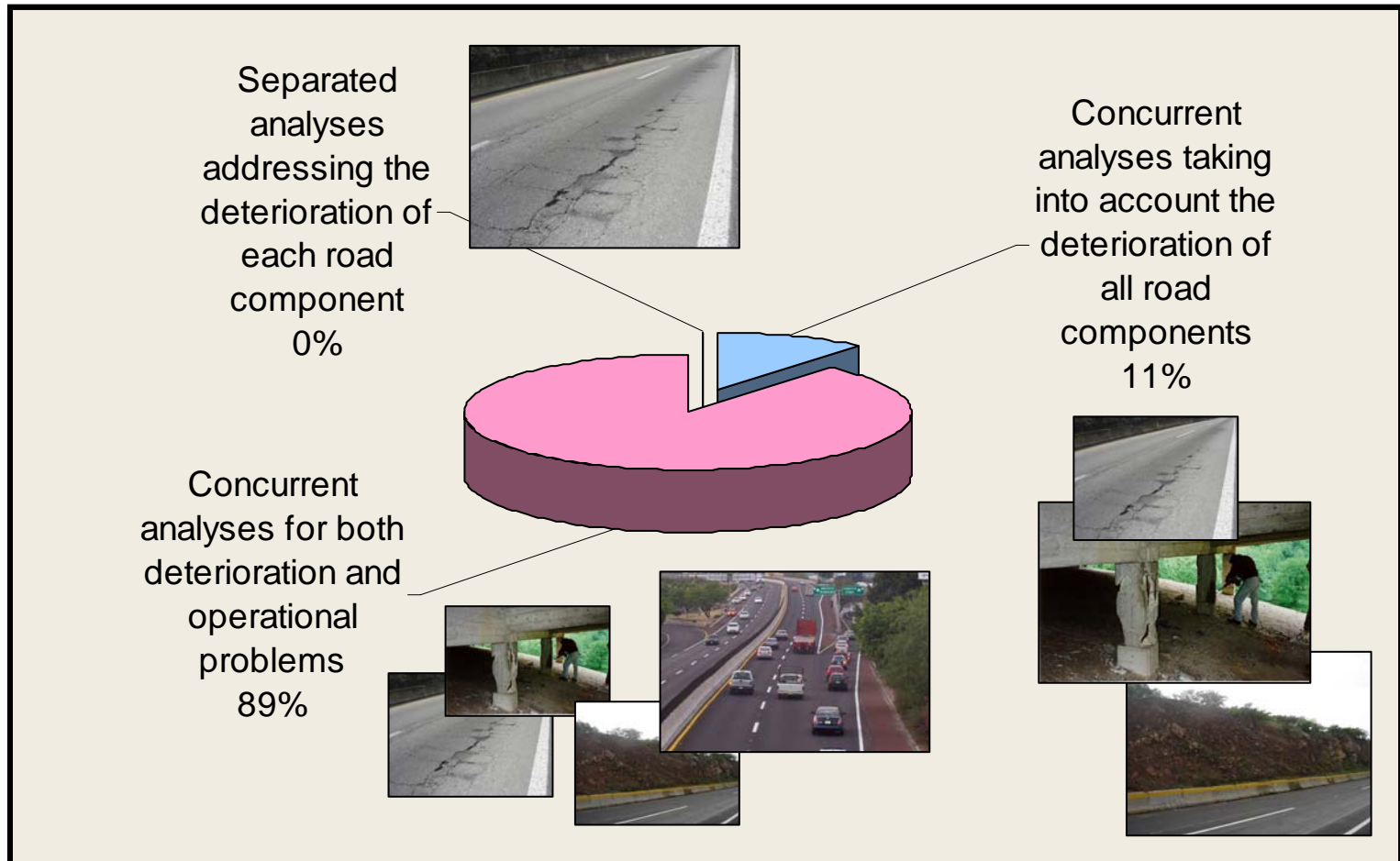
Perceptions on Asset Management Systems

Scope of systems application



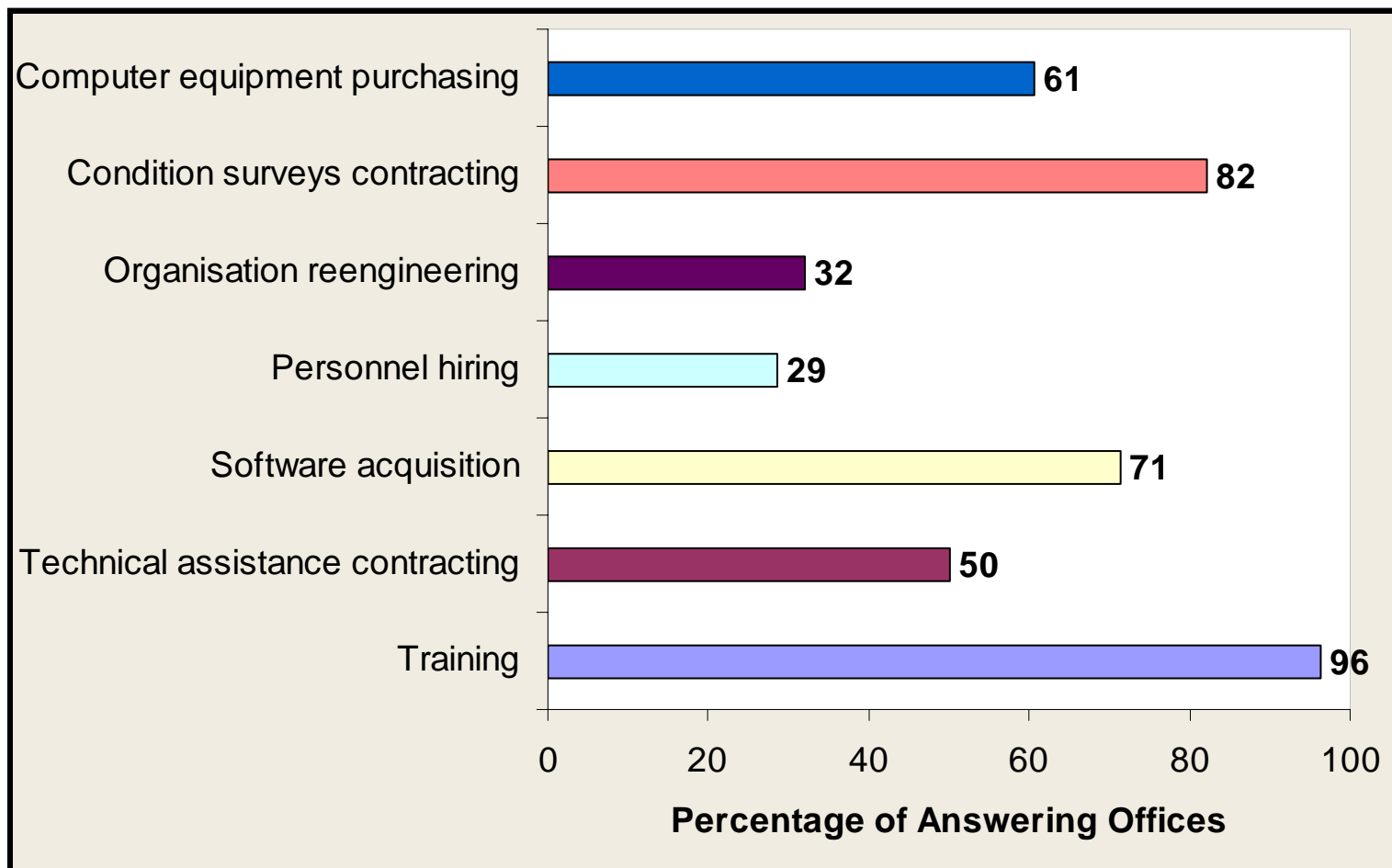
Perceptions on Asset Management Systems

Preferred approaches for road management



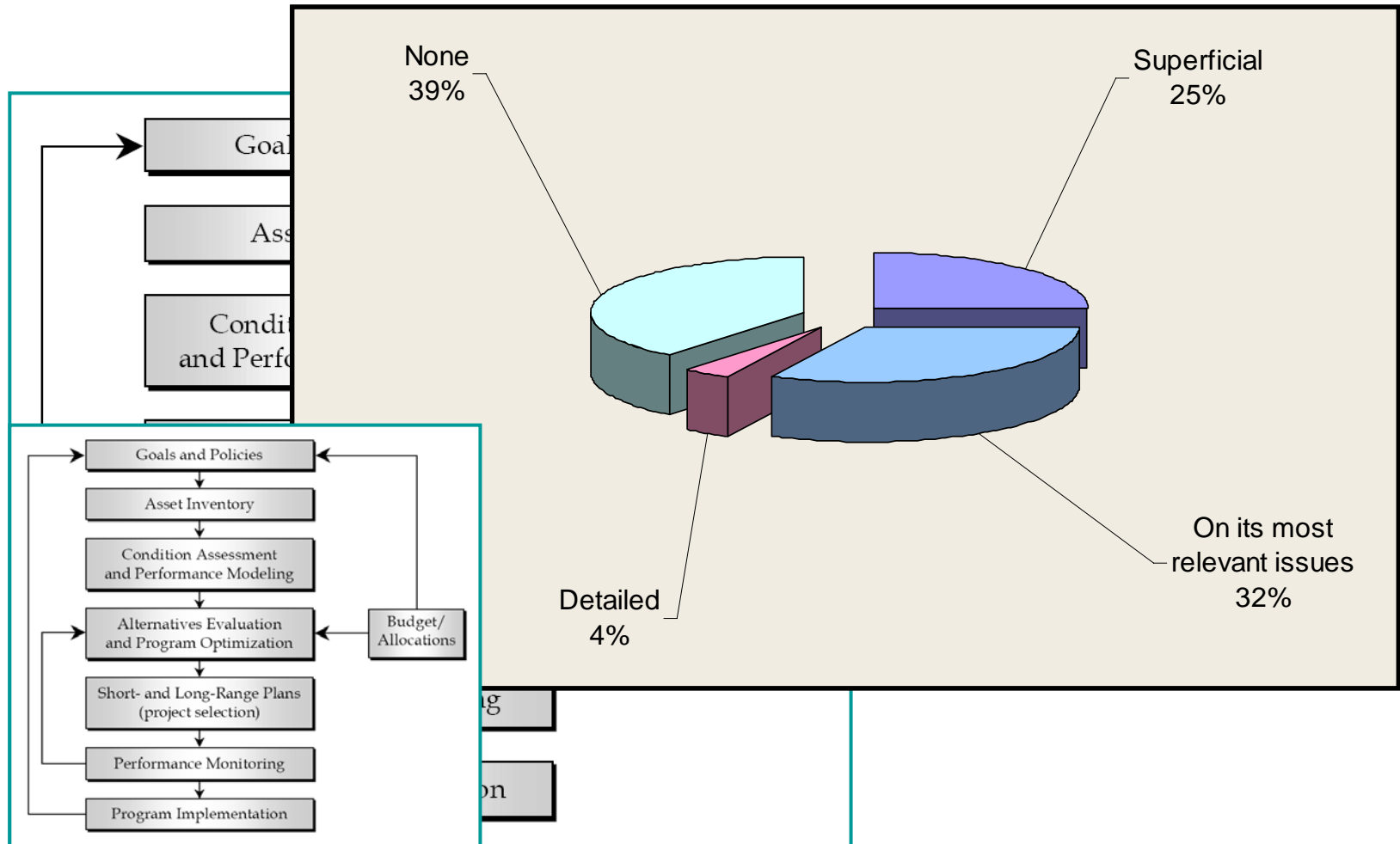
Perceptions on Asset Management Systems

Institutional provisions for systems implementation



Perceptions on Asset Management Systems

Awareness about the asset management paradigm



Conclusions

1. Management systems have been a matter of interest in the country for more than 15 years.
2. At least for the federal network, technical information is being taken into account for decision making.
3. There is little evidence of actual projects being developed at the state and local level.
4. Availability of measurement equipment is rising but still marginal when compared to potential demand.
5. No standard procedures have been officially adopted for calibrating or verifying equipment.
6. Transportation officials rate technical data and road management systems as high relevance topics.

Conclusions

7. Some traditional views about asset management are still common:
 - a) Understanding road management system as computing tools.
 - b) Restricting the scope of systems application to specialised departments.
 - c) Discarding organisation reengineering as a priority.



Conclusions

8. Implementation of management systems in the country has been accomplished using the subsystems approach.
9. Technical information could be still not reaching top level authorities.
10. Further actions by road authorities may be required to ensure proper equipment calibration.
11. Road management in Mexico could greatly benefit from a national divulgation effort on asset management.



Merci beaucoup!

