

Mitsubishi Mobile Monitoring System for Diagnosis



High density laser scanner, high resolution camera and various sensor technologies realize advanced automatic and labor-saving social infrastructure inspection



$\underline{\mathsf{MMSD}\, \mathrm{I\!I\!I}}$





MMSD II

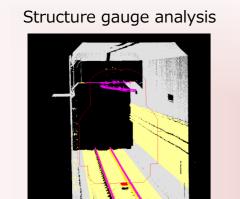




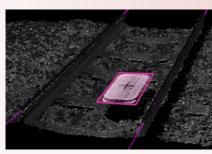
MMSD I

MMSD enables to grasp current status, deteriorating status of railway or road equipment by analyzing high accuracy measurement data.

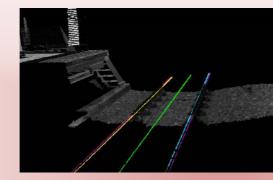
Example of railway infrastructure analysis



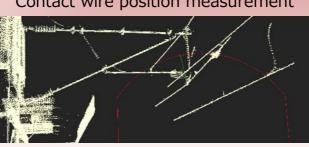
Beacon and signal location measurement



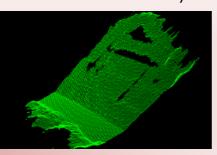
Gauge and center of track measurement



Contact wire position measurement



Earth wall surface analysis



Bolt joint status



Point cloud data → CAD



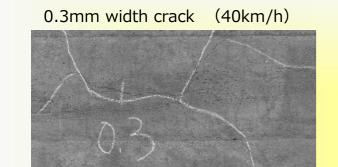
Point cloud data



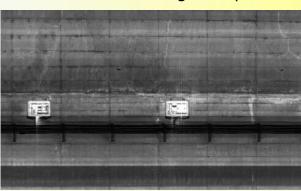
3D CAD data (DXF)

Road surface analysis Road surface analysis Rutting Rutting Rutting Rutting

Example of Tunnel wall state analysis



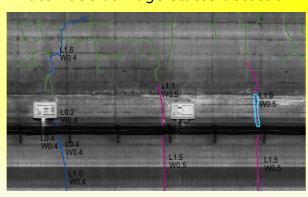
Automatic camera image composition



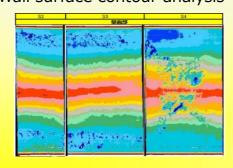
Free lime, water leakage (40km/h)



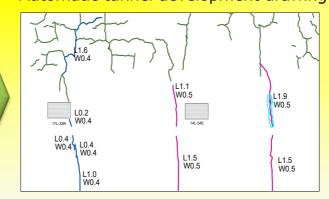
Automatic damage states detection



Wall surface contour analysis



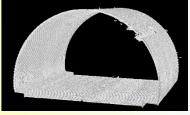
Automatic tunnel development drawing



Tunnel aged degradation analysis



Past measurement



Latest measurement



Comparison analysis (Inside=red, Outside=blue)

Mitsubishi Mobile Monitoring System for Diagnosis MMSD®

MMSD Vehicle specification

Item		MMSD I	MMSDII	MMSDⅢ
Application		Measurement along with road and railroad, Tunnel surface deviation measurement	In addition to MMSD I , crack detection of tunnel wall and road surface	
Applicable area		Road (Load MMSD I vehicle to a road-rail vehicle in case of railway)	Road + Railroad	Road + Railroad (Put container on flatcar. Smaller tunnel applicable.)
Vehicle	Base	PHEV	6ton truck (Road-rail vehicle)	6ton truck
	Power	Storage battery	Power generator	
Laser scanner		High density laser scanner + Standard laser		High density laser scanner
Wall imaging	Camera	(N/A)	8K line camera	
	Light	(N/A)	Laser light	
Road surface imaging	Camera	(N/A)	8K line camera	
	Light	(N/A)	Laser light	
Coordinate detection	GPS	Multiplexing		
	IMU	Multiplexing		
	Speed meter	Odometer, Laser Doppler (in running)		
Real-time clearance measurement		Available		

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