



List of Research and Development Themes –Infrastructure Maintenance, Renovation and Management–



	No.	Research and Development Theme	Principal Investigator (Affiliation)	
(1) Inspection, Monitoring and Diagnostics Technologies	1	Interdisciplinary R&D of NDE Techniques for Innovative Maintenance	Masahiro Ishida(Public Works Research Institute)	
	2	Development of the Laser Ultrasonic Visualization Technology for the Degradation Diagnosis of Steel Bridges	Junji Takatsubo(Tsukuba Technology Co., Ltd.)	
	3	Ultrasensitive Magnetic Nondestructive Testing for Deterioration Evaluation and Creating a Preservation Plan of Infrastructures	Keiji Tsukada(Okayama University)	
	4	R&D of Laser Directive Noncontact Diagnosis System for Maintaining Degraded Infrastructures	Katsumi Midorikawa(RIKEN)	
	5	Development of Automatic Technology on Pavement & Embankment Survey and Evaluation	Atsushi Yashima(Gifu University)	
	6	Non-destructive Inspection of Rebar Corrosion in Concrete	Kenji Ikushima(Tokyo University of A&T)	
	7	R&D of Backscatter X-ray Imaging System for Concrete Inspection	Hiroyuki Toyokawa(AIST)	
	8	R&D of Vibration Imaging Radar	Hitoshi Nohmi(Alouette Technology Inc.)	
	9	Inner Defects Inspection for Tunnel Lining using Rapidly Scannable Non-contact Radar and Synthetic Soundness Diagnosis System	Toru Yasuda(Pacific Consultants Co.,Ltd.)	
	10	Remote Sensing of Concrete Structure with the High-Sensitive Near-infrared Spectroscopy	Kazuhiko Tsuno(Shutoko Engineering Co., Ltd.)	
	11	R&D of Learning-Type Hammering Echo Analysis Technology	Masahiro Murakawa(AIST)	
	12	Inspection and Diagnosis System of Port Structure Using Radio Controlled Boat	Tetsuya Ogasawara(Penta-Ocean Construction Co., Ltd.)	
	13	Development of the Special GPR Including a Chip Radar in the Survey of a Cavity and a Settlement of the Back-fill Material	Shigeji Yamada(KAWASAKI Geological Engineering Co., Ltd.)	
	14	Development of the Monitoring System for Port Facilities using Satellite and SONAR	Takeshi Nishihata(Penta-Ocean Construction Co., Ltd.)	
	15	Monitoring by using Ground-Base Synthetic Aperture Radar and Array-type Ground Penetrating Radar	Motoyuki Sato(Tohoku University)	
	16	Monitoring System for a Round of Airport Paved Road Inspection, Utilizing a Technique for Detecting Cracks Automatically from High-resolution Images	Toru Hara(Alpha Product Co., Ltd.)	
	17	R&D of the Crack Detection System for Runways with a 3D Camera and all Direction-moving Robot	Yasuo Kimura(NTT Advanced Technology Corp.)	
	18	R&D of a Simplified System for Monitoring the Airport Pavement Surfaces Using Maintenance Vehicles	Yusho Ishikawa(The University of Tokyo)	
	19	Development of Wide Area Displacement Monitoring for Early Detection of Deformation or Damage of Civil Engineering Structures using Satellite SAR	Masafumi Kondo(National Institute for Land and Infrastructure Management)	
	20	Understanding the Scouring Situation by ALB (Airborne Laser Bathymetry)	Hiroaki Sakashita(PASCO Corp.)	
	21	R&D of Monitoring System for Bridge Performance Assessment Based on Vibration Mode Analysis	Tadao Kawai(Osaka City University)	
	22	Creation of Monitoring System using Equipment with Robotic Camera and etc. for Bridge Inspection	Yasuhisa Fujiwara(Sumitomo Mitsui Construction Co., Ltd.)	
	23	R&D of Quantitative Evaluation System of Cracks on Distant Slabs by Digital Image Analysis Technology	Kenichi Horiguchi(Taisei Corp.)	
	24	Field Validation of the Continuous Remote Monitoring System with Power saving Wireless Sensor	Hideshi Nishida(Omron Social Solutions Co., Ltd.)	
	25	R&D of the Technology which Monitors the Displacement Rate of an Artificial Structure with High Accuracy and Efficiency	Minoru Murata(NEC Corp.)	
	26	R&D of Monitoring System for Detecting Surface Failure by pore Pressure Sensor with Inclinator	Yasunori Shoji(OYO Corp.)	
	27	R&D of Early Warning Monitoring System of Slope Failure using Multi-point Tilt Change and Volumetric Water Content	Lin Wang(Chuo Kaihatsu Corp.)	
	28	Mole (Small Animals) Hole Detection System Attached to Large Weeding Machine	Kiyoshi Suzuki(Aero Asahi Corp.)	
	29	Electric Resistivity Monitoring System for the State of Water Contents in River Levee	Hideki Saito(OYO Corp.)	
	30	R&D of Monitoring System Including a Detection of River Levee Deformation	Shunsuke Sako(Japan Institute of Country-ology and Engineering, General Incorporated Foundation)	
	31	Effective Use of Satellite SAR Observation for River Embankment	Takeshi Katayama(Infrastructure Development Institute)	
	32	Monitoring System for Internal State of River Levee utilizing Geophysical Exploration and Ground Water Observation	Akira Shinsei(OYO Corp.)	
	33	Improvement for More Advanced and Efficient Road Structure Maintenance using Monitoring Technology	Atsushi Homma(Research Association for Infrastructure Monitoring System)	
	34	Maintenance and Management of Social Infrastructure utilizing IT (Inspections, Diagnosis)	Ministry of Land, Infrastructure, Transport and Tourism	
(2) Structural Materials, Deterioration Mechanisms, Repairs, and Reinforcement Technologies	No.	Research and Development Theme	Principal Investigator (Affiliation)	
	35	Deterioration Mechanism of Infrastructures and Materials Technology for Efficient Maintenance	Koichi Tsuchiya(NIMS)	
	36	Developing Hybrid Mechanoluminescence Materials for Visualization of Structural Health	Chao-Nan Xu(AIST)	
	37	Technology of Repairing the Corrosion Damage and Deterioration to Steel Structures using Newly Developed Flame Coating Material	Kenji Higashi(Osaka Prefecture University)	
38	Precast Practical Application of PCa with Super-High Durability Concrete	Toshiki Ayano(Okayama University)		
(3) Information and Communications Technologies	No.	Research and Development Theme	Principal Investigator (Affiliation)	
	39	Research, Development, and Social Implementation of Screening Technologies on Pavement and Bridges based on Large-scale Sensor Information Fusion toward Preventive Maintenance of Infrastructure	Masataka Ieiri(JIP Techno Science Co., Inc.)	
	40	R&D on Technologies for Collecting, Transmitting, and Processing Sensing Data of Civil Infrastructures (Underground Structures)	Shuichi Yoshino(NTT)	
	41	R&D of Integrated Data Management Platform for Civil Infrastructure Sensing	Jun Adachi(National Institute of Informatics)	
	42	Development of Technologies on Wide Variety of Data Processing, Storage, Analysis and Application to Achieve Advanced Infrastructure Management	Isao Ueda(East Nippon Expressway Co., Ltd.)	
43	R&D on Data Store/Management/Utilization Technologies for a Variety of Data Relating to Maintenance and Replacement of Civil Infrastructures	Toshihiro Kujirai(Hitachi, Ltd.)		
(4) Robotics Technologies	No.	Research and Development Theme	Principal Investigator (Affiliation)	
	44	Development of Infrastructure Inspection System using Semi-autonomous Multi-copter equipped with Flexible Electrostatic Adhesive Device	Tadahiro Hasegawa(Shibaura Institute of Technology)	
	45	R&D of Diagnostic Technology Based on Measurement and Analysis by Multi-copter	Toshio Fukuda(Meijo University)	
	46	Development of Intuitive Teleoperation Robot using the Human Measurement	Shigeki Sugano(Waseda University)	
	47	Development of Bridge Inspection Robot System Supported by the Provisional and Flexible Scaffolding Structure	Shigeo Hirose(HiBot Corp.)	
	48	R&D of Flying Robot for Bridge/Tunnel Inspection	Toshihiro Nishizawa(NEC Corp.)	
	49	R&D of the Variable Guide Frame Vehicle for Inspection of Tunnel	Satoru Nakamura(Tokyu Construction)	
	50	Development of Unmanned Aerial Vehicles for Observing and Hammering Aged Bridges at Short Range	Kazunori Ohno(Tohoku University)	
	51	R&D of a Multi-copter-based Inspection Robotic System with Visual Observation and Hammering Test Devices	Hideki Wada/Shinnippon Nondestructive Inspection Co.,Ltd.)	
	52	Development of a Bridge Inspection Support Robot System that uses Proximity-images with Geotag and a Two-wheeled Flying Robot	Naoyuki Sawasaki(Fujitsu Ltd.)	
	53	New Development of Unmanned Construction ~Realization of Remote Operated Working System in Shallow Water Area~	Shin'ichi Yuta(New Unmanned Construction Technology Research Association)	
	54	Research and Development of Infrastructure Structures and Inspection Devices for Advanced Inspection of Civil Infrastructure	Kenichi Fujino(Public Works Research Institute)	
	55	Research and Development Concerning Mechanized Mobile Object Inspection Methods and Structure Forms that Aim to Save Energy and Improve Accuracy of Inspection	(Changed to Joint Research with the Public Works Research Institute)	
56	Establish a Unification System of Robotics Information for Civil Infrastructure	Ministry of Land, Infrastructure, Transport and Tourism		
(5) Asset Management Technologies	No.	Research and Development Theme	Principal Investigator (Affiliation)	
	57	Global R&D on the Management Cycle of Road Infrastructures	Koichi Maekawa(The University of Tokyo)	
	58	Resolution of Early-aged Deterioration Mechanism & Development of Total Management System Based on Evaluation for Material and Structure Quality Performance	Kazuyuki Torii(Kanazawa University)	
	59	Development of Life-cycle Management System for Port and Harbour Facilities - Integrated Framework from Inspection to Assessment	Emi Kato(National Institute of Maritime, Port and Aviation Technology)	
	60	R&D of Development of Strategic Asset Management Technologies for Trunk Agricultural Water Facilities	Isamu Nakajima(National Agriculture and Food Research Organization)	
	Regional implementation support team (including *)			
	61	Research on Regional Cooperation for Applications of Asset Management for Civil Infrastructures	Yasushi Takamatsu(Hokkaido University)	
	62	Conversion to a Regional-Autonomous System as Next-Generation Water Infrastructure Management	Ken Ushijima(Hokkaido Research Organization)	
	63	Establishment and Promotion of the Tohoku Infrastructure Management Platform	Makoto Hisada(Tohoku University)	
	64	Implementation of Effective SIP Maintenance Technologies by the ME Network	Keitetsu Rokugo(Gifu University)	
	65	Framework of Infrastructure Maintenance in Kansai/Hiroshima Regions and Actual Deployment of New Technologies	Hiroshi Furuta(Kansai University)	
	66	Development of Civil Infrastructure Maintenance Systems for Local Governments Through Multi-Phased Diagnosis	Tamotsu Kuroda(Tottori University)	
	67	Development of Local Government Support Systems Focusing on Risks of Serious Accidents	Pang-jo Chun(Enime University)	
	68	Research and Development of Implementation in Society of Innovative Advanced Technology for Civil Infrastructure Maintenance	Hiroshi Matsuda(Nagasaki University)	
	69	Development of Bridge Maintenance Technologies for Subtropical Islands and Training Diagnostic Experts	Yasunori Arizumi(University of the Ryukyus)	
	70	Development of Models for Improving Service Life of Civil Infrastructures Through Cooperation between Business Administration, Science and Engineering, and Economics	Atsuomi Obayashi(Keio University)	
71	Research and Development Concerning Introduction of Asset Management Technologies to Local Governments, etc.	Toshihiko Doi(Japan Foundation for Regional Vitalization)		