ACECC TC28
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For a Better Quality of Life

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Introduction of TC28

Technical Committee (TC) on Application of Monitoring Technology for Infrastructure Maintenance

For a Better Quality of Life

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Introduction

ACECC TC28

Chair

Name: Prof. Eiki YAMAGUCHI
Affiliation: Kyushu Institute of Technology

Secretary

Name: Dr. Masaaki NAKANO
Affiliation: Nippon Koei Co., Ltd.

Vice Secretary

Name: Mr. Tetsuro GODA
Affiliation: Nippon Koei Co., Ltd.

Representatives from each society/institution

ASCE, CICHE, EA, IEB, IEP, KSCE, PICE, VFCEA, JSCE

JSCE National Supporting Committee

2. Representatives

<Representative List for TC28>

As of 2022.3.14

Organization	(1) Name	(2) Affiliation	(3) Position	(4) Specified field	(5)Contact Address	(6)E-mail address
ASCE (US)	Dr. Lian Duan	California Department of Transportation, USA	Senior Bridge Engineering, Steel Committee Chair	Seismic Design, Structural Stability, Bridge Design	1801 30th Street, DES MS-9/1H, California Department of Transportation, Sacrameto, CA 95816, USA	lduanbeh@gmail.com
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2. JSCE National Supporting Committee

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As of 2022.3.14

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NIPPON KOEI
Challenging mind, Changing dynamics

Background

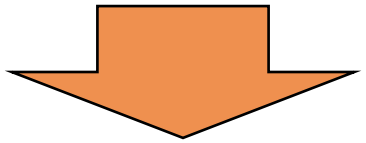
- Infrastructure is critical for economic prosperity, economic growth and sustainable development. While many countries invest heavily in infrastructure construction, much less attention has been paid to maintenance work, which could generate a serious bottleneck to economic growth and public services in the long run.
- Utilizing new technologies for systematic infrastructure management is essential for both preventing accident and minimizing life-cycle-cost.

Air-borne salt from sea

Deteriorated beam

Objectives

- **Civil Infrastructures have been constructed across the Asian region; however, maintenance has already become a big issue.**
- **Although a lot of monitoring technologies and products are developed, the administrators are struggling to choose technologies since the practical specifications are not standardized.**



- **The TC is to prepare the guidelines on the scheme for the maintenance of infrastructure; by making good use of monitoring technology, the maintenance work would be made sophisticated and efficient.**

JSCE Recommendations (Draft)

- [Draft of Recommendations for Utilization of Monitoring Technology in Japan](JSCE) was published in June
- The TC will share the contents and discuss developing and reconstructing as the ACECC guidelines.

Table of Contents of JSCE Recommendations

JSCE Recommendations (Draft)

Chapter 1 General

1.1 Scope of application

The Recommendations for Utilization of Monitoring Technology (hereafter referred to as "these Recommendations") apply to monitoring of road structures.

1.2 Objective of Monitoring

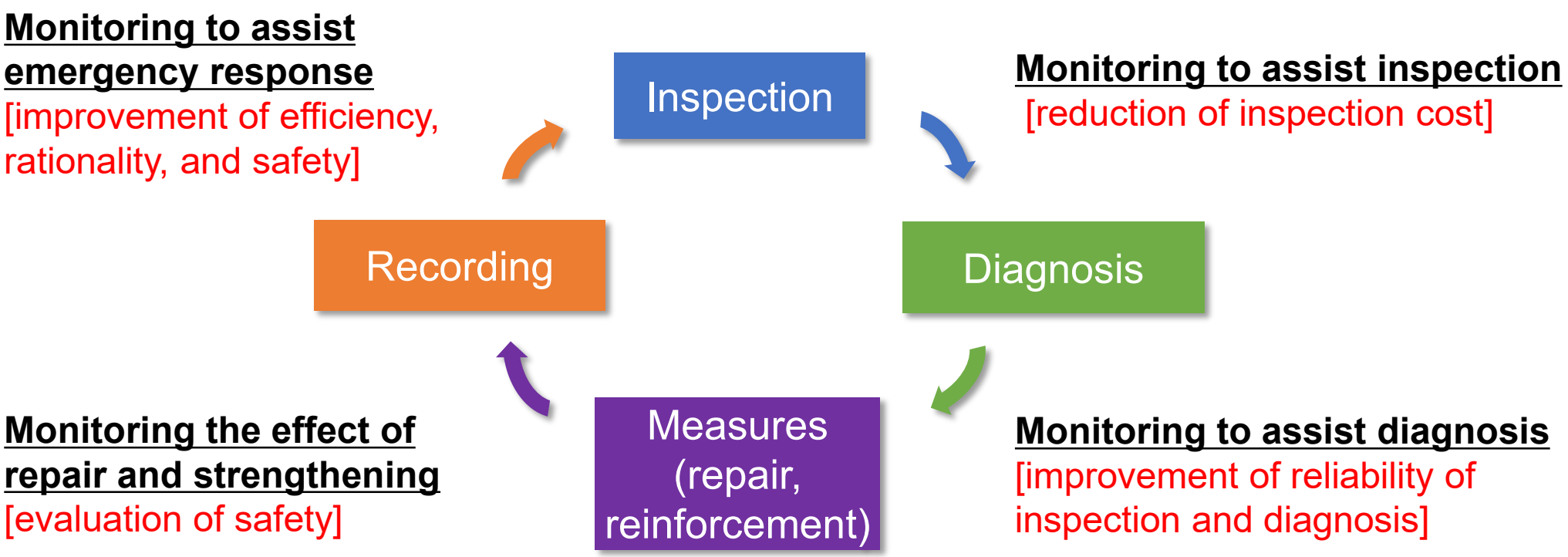
(1) Maintenance of structures is implemented in a basic cycle of [inspection→diagnosis → countermeasure (repair→ strengthening, etc.) → record]. To utilize monitoring within the maintenance cycle, it is important that the purpose of implementing it within the maintenance cycle is clarified, as follows.

[1]Monitoring to assist inspection
[2]Monitoring to assist diagnosis
[3]Monitoring to check the effect of repair and strengthening
[4]Monitoring to assist emergency response

(2)Monitoring is implemented after more specifically clarifying the purpose, in accordance with the type of structure, form of defects, environmental conditions, etc., in accordance with the maintenance policy of the administrator of the structure.

JSCE Recommendations (Draft)

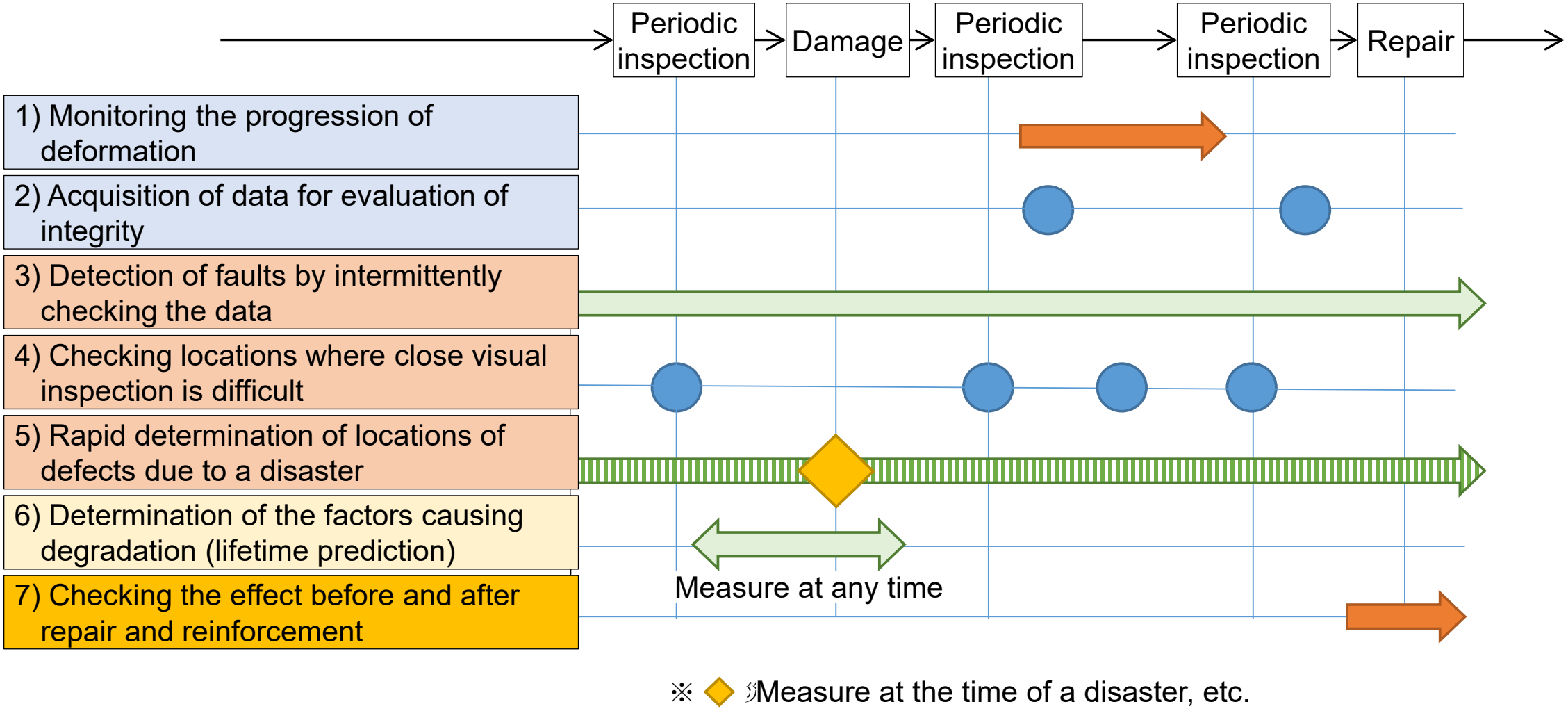
Maintenance Cycle of Infrastructures



Needs and objectives of monitoring (examples)

Objective of monitoring	Administrator's needs	Specific objectives
[1]To assist inspection	To reduce oversight of degradation during normal inspection	To determine locations where some kinds of defects has occurred.
	To reduce the area of periodic inspection and the time and cost of inspection.	To determine the range that has integrity or the range that needs to be monitored.
[2]To assist diagnosis	To prevent progression of degradation by implementing preventive maintenance	To obtain the information to decide whether implementing preventive maintenance is needed.
	To determine the order of priority of measures.	To acquire and compare quantitative data.
	To improve the accuracy of evaluation of integrity.	To acquire qualitative and quantitative data for evaluation of integrity.
	To maintain the state of service	To check whether the status where traffic restrictions or traffic closure should be imposed has been reached.
		To check the status while countermeasures such as repair or strengthening are being taken.
[3]To check the results of repair or strengthening	To check the validity of countermeasures	To check the effects and sustainability of countermeasures.
[4]To assist emergency response	To rapidly determine locations where it is dangerous to pass.	To identify locations where danger such a bridge collapse can be anticipated.
	To shorten the time to open traffic.	

Concept of implementation of monitoring



Thank you for your kind attention!