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Professional Career: EC Member and Treasurer, Asian Concrete Federation (ACF) (since 2011)

Executive Director, Taiwan Concrete Institute (TCI) (since 2009)

Executive Director, Chinese Society Structural Engineering (CSSE) (since 2007)

Professor, Department of Civil Engineering, NTU (Since 2004)

Director, Center for Earthquake Engineering Research, NTU (2006-2009)

President, ACI Taiwan Chapter (2005-2006)

Deputy Secretary General, Asian Civil Engineering Coordinating Council (ACECC) (2004-2007)

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PRESENTATION TITLE: Introduction of Maintenance Management for Bridge and Slopes of National Freeway in Taiwan

ABSTRACT: Taiwan, being in subtropical climate area and the Circum-Pacific seismic region, faces threats of frequent typhoons, earthquakes, and heavy rainfalls. Furthermore, complex terrains and steep mountains further induce severe scour the river bed that threatens bridge piers. In September 14th 2008, Sinlaku typhoon struck and caused collapse of Hou-Feng Bridge with a number of vehicles falling off the river. In August 7th 2009, the extremely heavy rain of Morakot typhoon even induced collapse of more than 50 bridges in middle and southern Taiwan, including a highway bridge.

Freeway #1, which links the major cities in the west corridor of Taiwan between Keelung and Kaohsiung, is one of the major transportation lifelines in Taiwan. In order to release the traffic demand, Freeway #3 was built and started to serve in 2004. The two freeways are the most important backbones of transportation of Taiwan. In total, there are 763 bridges along these two freeways. Well maintenance of bridges is the key to ensure proper functioning of the freeways. Beside bridges, condition of slopes is another critical factor to safety of the transportation network. A great portion of Freeway #3 passes by mountain region. In total, 939 slopes in this freeway have to be watch for potential landslide. In April 26th 2010, a catastrophic landslide with hundreds of thousand tons of rock and soil took place in northern region of the freeway, which buried several vehicles and caused a number of casualties. After the event, Taiwan Area National Freeway Bureau (TANFB), the authority of National Freeway, conducted a full inspection of slope safety for the entire freeway. This task will complete in September 2013. In this section, an introduction of maintenance management of bridges and slopes for Taiwan area national freeway will be presented. Standard tasks for bridge maintenance include visual inspection, scour monitoring, and the deliver of Taiwan Bridge Management System (T-BMS). The management of slopes includes visual inspection, landslide monitoring, and a slope safety management system.