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Jksb and incheon bridge corporation to collaborate beyond bridge management and maintenance

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Kuala Lumpur, 16 November 2015: Jambatan Kedua Sdn Bhd (JKSB) is carving a new milestone in the local bridge management and maintenance when it signs a Memorandum of Understanding (MoU) with Incheon Bridge Corporation, the operator of Incheon Grand Bridge in South Korea.

The signing of the MoU between the two took place in Seoul, South Korea on 2 November 2015 in conjunction with the 25th World Road Congress. The MoU was sealed at a simple ceremony witnessed by YB Dato' Sri Fadillah bin Haji Yusof, Minister of Works Malaysia, at the Malaysian Pavilion.

"The MoU signing is yet another history in the making as JKSB, the concessionaire of Jambatan Sultan Abdul Halim Mu'adzam Shah (JSAHMS) has always wanted to benchmark ourselves with other world-class bridge operator. Both JKSB and Incheon Bridge Corporation will be working together in developing practical collaboration such as exchange of engineers, exchange of research outcomes and other activities related to bridge management and maintenance," says YBhg. Dato' Ir. Dr. Ismail Mohamed Taib, Managing Director of JKSB.

The MoU will not only be limited to these activities only as there are possibilities for the two operators of world-class bridges to go beyond management and maintenance of their award winning bridges.

Apart from developing practical collaboration in bridge management and maintenance, which can be shared to others via the organisation of seminars and conferences, both JKSB and Incheon Bridge Corporation will also be working together in enhancing their current Corporate Social Responsibility (CSR) initiatives, if not emulating one another.

Incheon Bridge Corporation started their CSR initiatives in 2009 with one programme, providing shelters for abandoned pets. Each year they will add one new programme, and this year, they will produce warm clothing for old single woman for the winter. Each of these warm clothing are knitted by their personnel who volunteered for it. As of now, Incheon Bridge Corporation has six CSR initiatives.

Both bridges are sea-crossing bridges with similar length. The most important factor for a bridge operator with such length is a flow of information to the users. It is vital for important information to reach the users as soon as possible due to safety reasons.

Similar to Incheon Grand Bridge, JSAHMS is also implementing its Intelligent Road Systems (ITS). With ITS, information can be relayed to the users on real-time basis. The goal is to improve transportation safety and mobility, including enhancing productivity with the use of advanced communications technologies.

JSAHMS is using CCTVs to monitor the actual traffic condition along the bridge's alignment. It is also using sensors located at several locations on the bridge to provide data on traffic condition, weather and wind velocity. These data, if severe, will be directed to all users via Variable Messaging Systems (VMS) that can inform the users whether to choose an alternative route, reduce their travelling speed and be more alert when travelling in such conditions.

ITS can also present with real-time data to JKSB to manage, plan and divert the traffic to the first bridge, and vice versa, should the condition is worsening and the bridge is too congested, or if the weather condition is too risky for the users to continue their journey on the bridge and close the route for all vehicles.

JSAHMS has more than 500 sensors for the Intelligent Structure Health Monitoring System (ISHMS). The system is vital for sea-crossing bridges such as JSAHMS and Incheon Grand Bridge. SHM system will provide the actual health condition of the bridge's structure as it is always expose to continuous abused and stressed out by the vehicles' load and other environmental elements.

The ISHM is integrated with ITS as it can provide real-time on the bridge's structure condition and can immediately identify if a certain part of the bridge is having a structural fatigue and can pose imminent danger to the traffic, especially after an earthquake. If this happen, sensors on the bridge will give out an alarm and prompt the operators to take immediate actions.

Not only that, the system is also able to identify any vehicles that are carrying more load than what the bridge is designed for, the system will alert the operator of such vehicle and stop the vehicle from using the bridge and cause more structural damage using its weigh-in-motion sensors.

"We will not only limit our collaboration to managing and maintaining bridges only, but also on other areas such as CSR initiatives, managing environmental impact, improving our safety procedures and other areas that are relevant with operating a critical bridge near industrial or mixed developed area," continues Dato' Ismail.

The MoU is significant as both bridges are world-class bridges. JSAHMS is currently the longest bridge in Southeast Asia, while Incheon Grand Bridge is the longest bridge in Korea and its Cable Stayed Bridge is the fifth longest in the world. Both bridges have also won several international awards and accolades.

Incheon Grand Bridge won numerous local and international awards such as the Grand Prize in Civil Engineering in 2009, the Tanaka Award from Japan Civil Engineering Society in 2010 and the Outstanding Civil Engineering Achievement Award by the American Society of Civil Engineers in 2011.

JSAHMS has also won numerous international awards such as the Green Apple Awards, UK in 2013 for its Green Initiatives during construction phases, the International Star Award for Quality (ISAQ), Geneva in 2014 and the Brunel Medal Award for excellence within civil engineering from the Institution of Civil Engineers (ICE), UK in October 2015.

JKSB is the first concessionaire in Malaysia to adopt Green Technology in the construction of JSAHMS. The bridge's toll plaza complex in Batu Kawan is the first building awarded with a Platinum Rating for the Green Building Index (GBI) in Penang and the first to deploy Electric Vehicles as its patrol vehicles.

The concessionaire also exploits renewable energy source such the use of photovoltaic solar panel on top of its Administration and Operation buildings in Batu Kawan and the wind turbine to generate electricity at Surau Sheikh Abdullah Fahim near the layby area.

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Sultan Abdul Halim Mu'adzam Shah Bridge was officially opened by YAB Dato' Sri Mohd Najib bin Tun Abdul Razak, the Prime Minister of Malaysia on 1 March 2014. The project's overall length is 24km of which 16.9km is the marine bridge.

It links Batu Kawan on the mainland of West Malaysia and Batu Maung on the Penang Island; and it is currently the longest bridge in Southeast Asia. It does not only provide an alternative route to Penang Island, but also a catalyst for the socio economic growth and development in Penang, especially in the southern part of the state.

JKSB Board of Directors visiting the Inspection Gondola for the 800m Incheon Grand Bridge Navigation Span, South Korea.