1108-00-421 **Meng Meng Yu** (mengmeng.yu@delphi.com), 118 De Lin Road, Shanghai, 200131, Peoples Rep of China, **Guanglin Ma** (guanglin.ma@delphi.com), 118 De Lin Road, Shanghai, Peoples Rep of China, and **Henry Kong*** (henry.kong@delphi.com), 3000 university Drive, Rochester Hills, MI 48326. *360 Surround View System with Parking Guidance.*

In this talk, we present a real-time 360 degree surround system with parking aid feature, which is a very convenient parking and blind spot aid system. In the proposed system, there are four fisheye cameras mounted around a vehicle to cover the whole surrounding area. After correcting the distortion of four fisheye images and registering all images on a planar surface, a flexible stitching method was developed to smooth the seam of adjacent images away to generate a high-quality result. In the post-process step, a unique brightness balance algorithm was proposed to compensate the exposure difference as the images are not captured with the same exposure condition. In addition, a unique parking guidance feature is applied on the surround view scene by utilizing steering wheel angle information as well as vehicle speed information. The challenges include the real world applications with minimum computation power to achieve the optimum performance. The mathematical model and solutions for this application will be explained and discussed. (Received January 19, 2015)