Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: V2I CamCom Link for Air Vehicle Emergency Landing SIGN

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Abstract: This documents introduce the Air Vehicle Emergency Landing SIGN based V2I Vehicle CamCom Concept models for Vehicular Assistant Technology (VAT). This proposed VAT using Image Sensor Communication to operate on the application services like ITS, ADAS, IoT/IoL, LED IT, Emergency EXIT, Digital Signage with Advertisement Information etc.

Purpose: To Provided Concept models of Vehicle CamCom for Vehicular Assistant Technology (VAT) Interest Group

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- Air Vehicle Emergency Landing
- Air Vehicle Landing Runway SIGN-CamCom Link
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Air Vehicle Landing Issues

- Emergency Landing
 - Force Landing due to technical problem
 - Ditching is same as forcing but only in water
- Poor Climate Conditional Landing
 - Heavy Training
 - Snowing
- Human and Navigation System Error
- Runway Scheduling Conflict by ground Station
- Unanticipated Human / animal interference
- Ground Station Lighting Problem









Air Vehicle Landing Runway SIGN-CamCom Link

V2I Emergency EXIT - CamCom Link



- Advantages
 - Provides Safety Landing Assistance
 - Real-Time Environmental Condition Information Sharing between ground station and air vehicle
 - Guides to Emergency Information for Landing

- V2I CamCom Link between Air Vehicle Runway SIGN and Air Vehicle Bottom View Camera
 - Landing Runway SIGN used for Indicating Safe Landing as well as Runway LED based CamCom Tx
 - Uses Modulation Techniques
 - OOK
 - Multilevel PPM
 - Inverted PPM
 - Sub Carrier PPM
 - DSSS SIK
 - Air Vehicle Tracking Runway SIGN using Bottom view camera work as Rx
 - Runway SIGN Tx Transmits
 - Exact Local Position, Runway Start Point, Runway Length, direction to move runway starting point and Runway Environment Conditions Informations
 - Location Informations
 - Real-Time Runway Traffic Informations
 - Provide high end Landing assistance information to s6aft landing and ensures runway safety measures

Conclusion

- Proposed the Air Vehicle Landing Runway SIGN-CamCom Link Technology Use Case Model
- Provides Safety Landing Assistance with emergency support centers help information use of Emergency Landing to CamCom Technology
- Easy Integration support with ITS using Mobile Infrastructure Technology in Normal and Emergency Landing Situations
- Novel runway safety system and directly related to human and material safety