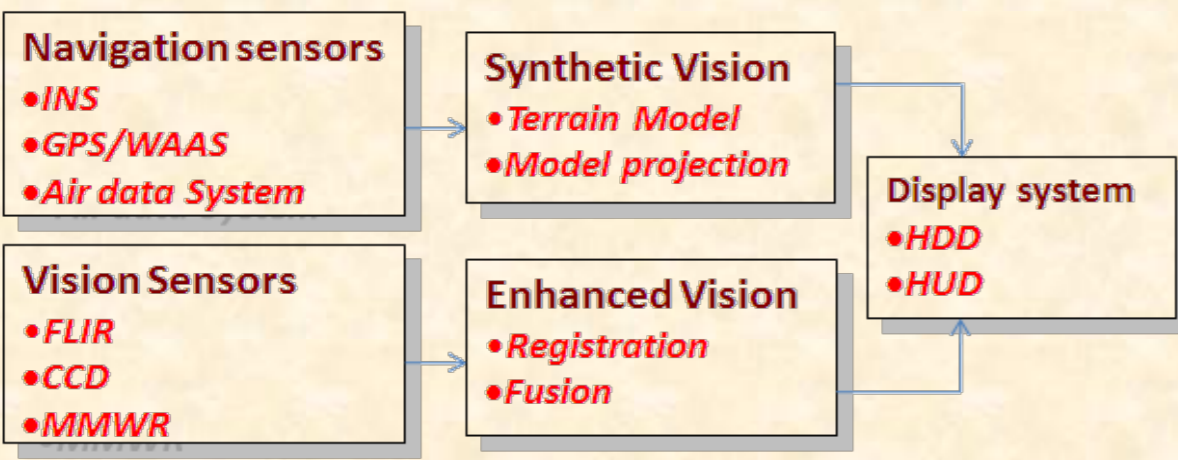


Experimental Study with Enhanced Vision System Prototype Unit

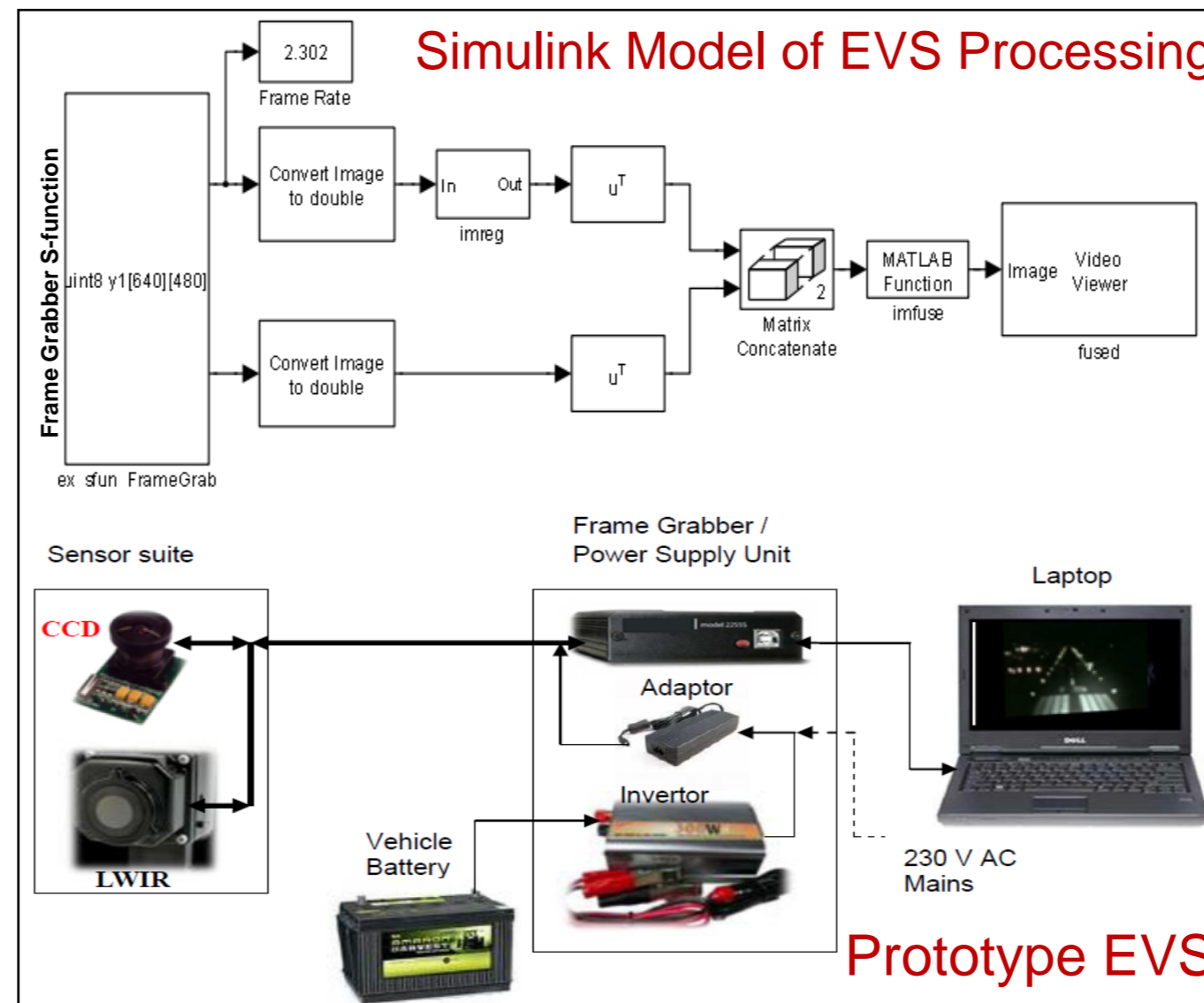
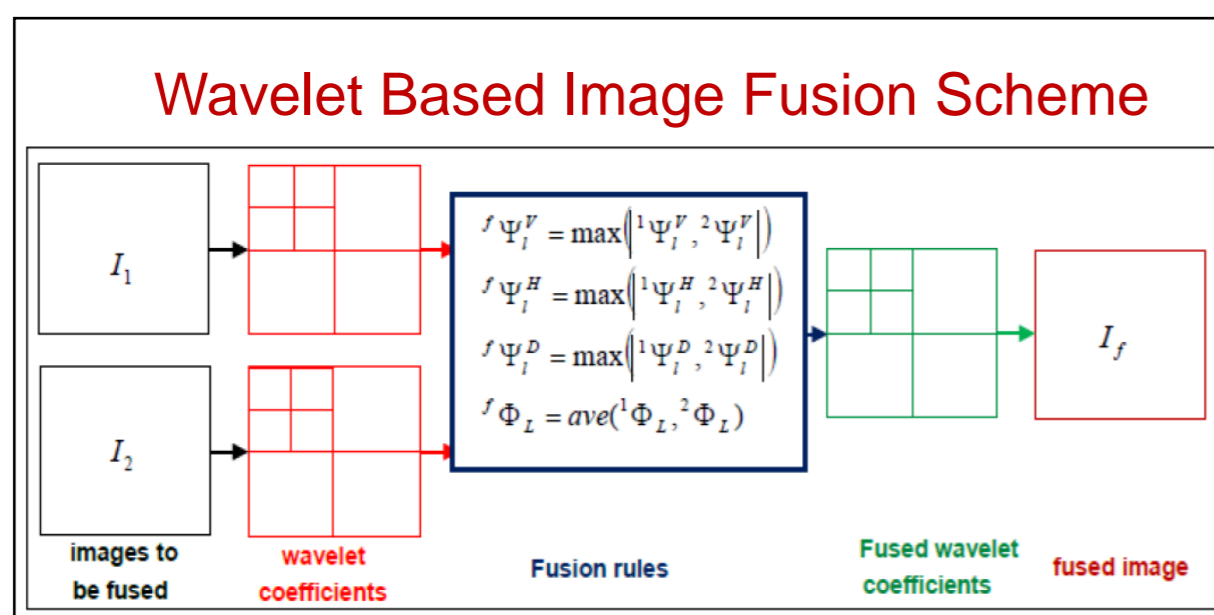
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INTRODUCTION

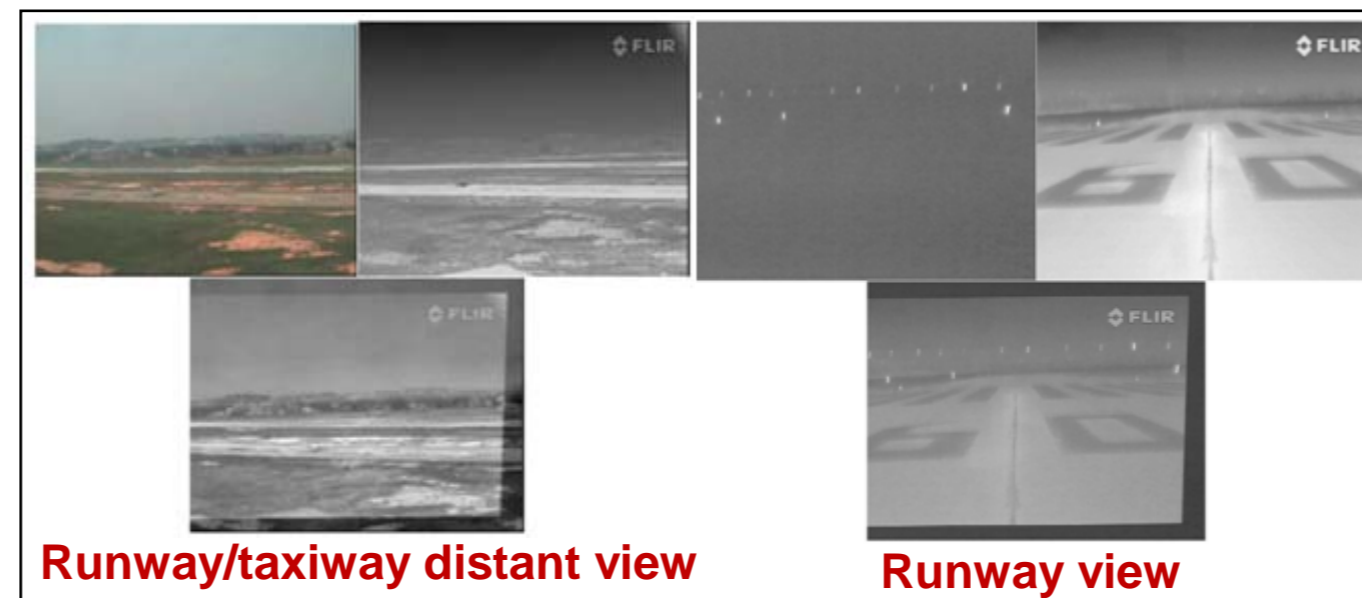
CSIR-NAL is the design authority for the National civil aircraft which is expected to be capable of all-weather operation from fully equipped airports to operate autonomously to new airports with minimal infrastructure. Integrated Enhanced Synthetic Vision System (IESVS) supported by INS and GPS/WAAS is a key enabling technology for these operations. IESVS is meant to eliminate visibility-induced errors and low visibility conditions as causal factors in civil aircraft accidents. It provides operational benefits of clear day flight operations regardless of outside visibility through integration of several vision based technologies that are affordable, effective and can be certified. IESVS concept provides pilots with high-integrity information that improves situational awareness with respect to terrain, obstacles, traffic, and flight path.



METHOD



RESULTS



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CONCLUSIONS

EVS prototype developed and tested at airport during day and night (with runway lights ON and OFF) conditions

Frame grabber interface unit developed in Simulink to test the EVS prototype in real time.

CCD and LWIR sensors were registered using control point selection method

Wavelet based image fusion algorithm used to fuse the CCD and LWIR images

Fused image contains all the information/features of runway to give the pilot better situational awareness of the runway

The prototype experiment is the first step for realizing an IESVS for civil aircraft

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