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**Yerushalmy et al.**

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(54) **COMBINED STEREOSCOPIC AND PHASE DETECTION DEPTH MAPPING IN A DUAL APERTURE CAMERA**

(58) **Field of Classification Search**  
CPC ..... H04N 13/239; H04N 13/133; H04N 2013/0081; G06T 7/593  
See application file for complete search history.

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(57) **ABSTRACT**

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In an imaging system having a first camera with a first field of view (FOV) and a second camera with a second FOV smaller than the first FOV, wherein the first and second FOVs overlap over an overlap region, a method for calculating a calibrated phase detection depth map over the entire first FOV comprises calculating a stereoscopic depth map in the overlap region using image information provided by the first and second cameras, obtaining a first camera phase detection (PD) disparity map in the entire first FOV, and using the stereoscopic depth map in the overlap region to provide a calibrated 2PD depth map in the entire first FOV.

(51) **Int. Cl.**

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(52) **U.S. Cl.**

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**9 Claims, 5 Drawing Sheets**

