



Dataset Construction for Building Classification and Density Estimation from High-Resolution Satellite Imagery

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Dataset Construction Pipeline



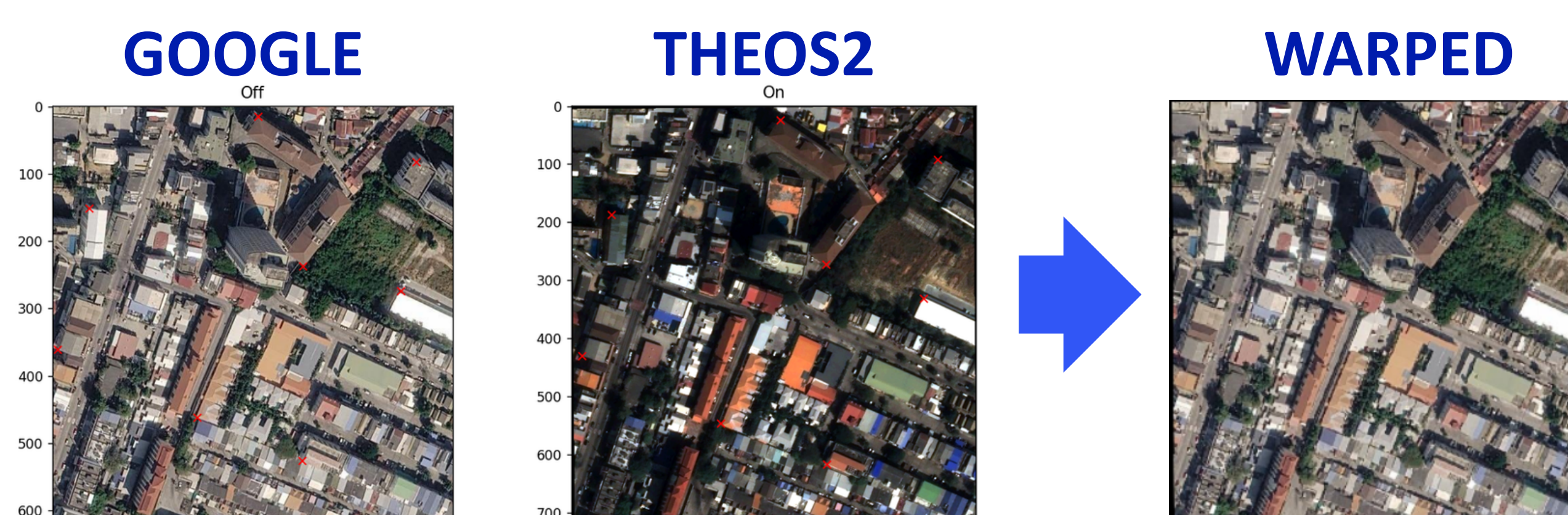
• SLICING (10 x 10)



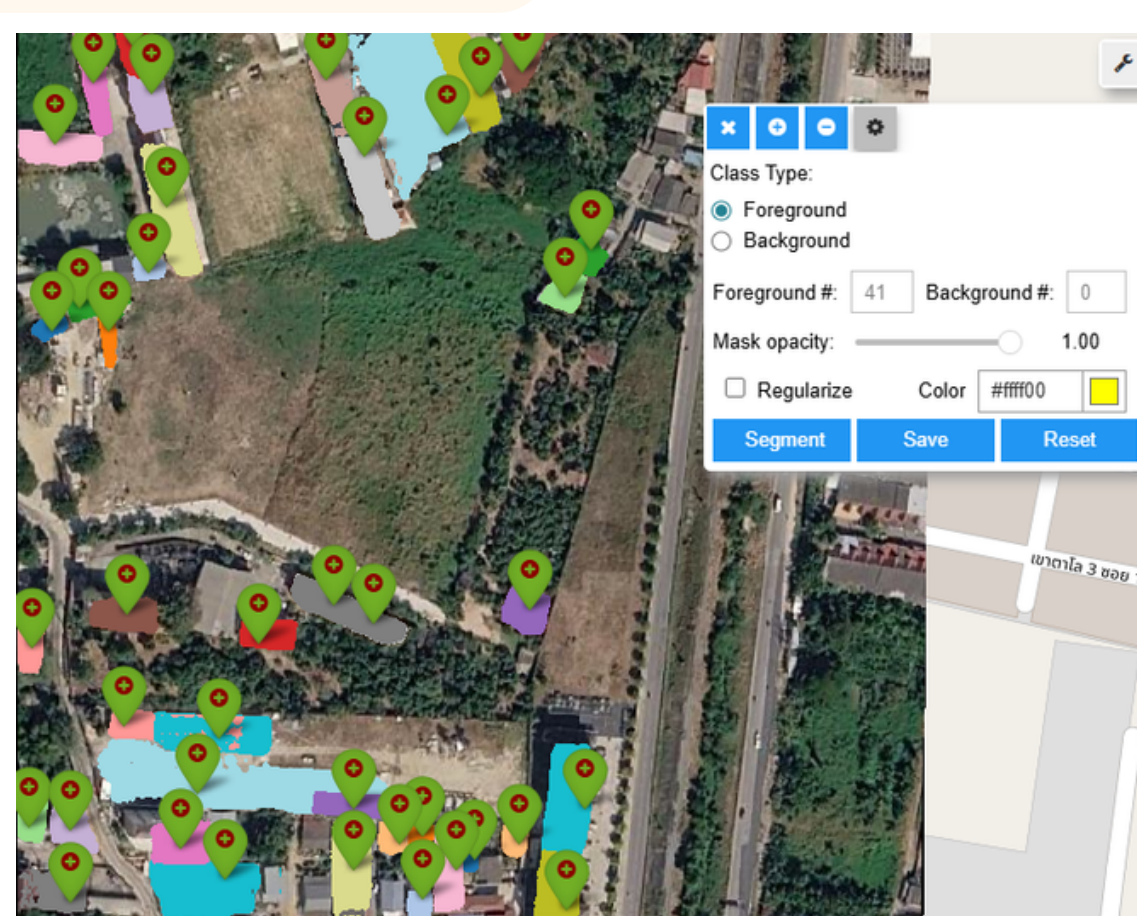
COORDINATES MATRIX



• WARPING

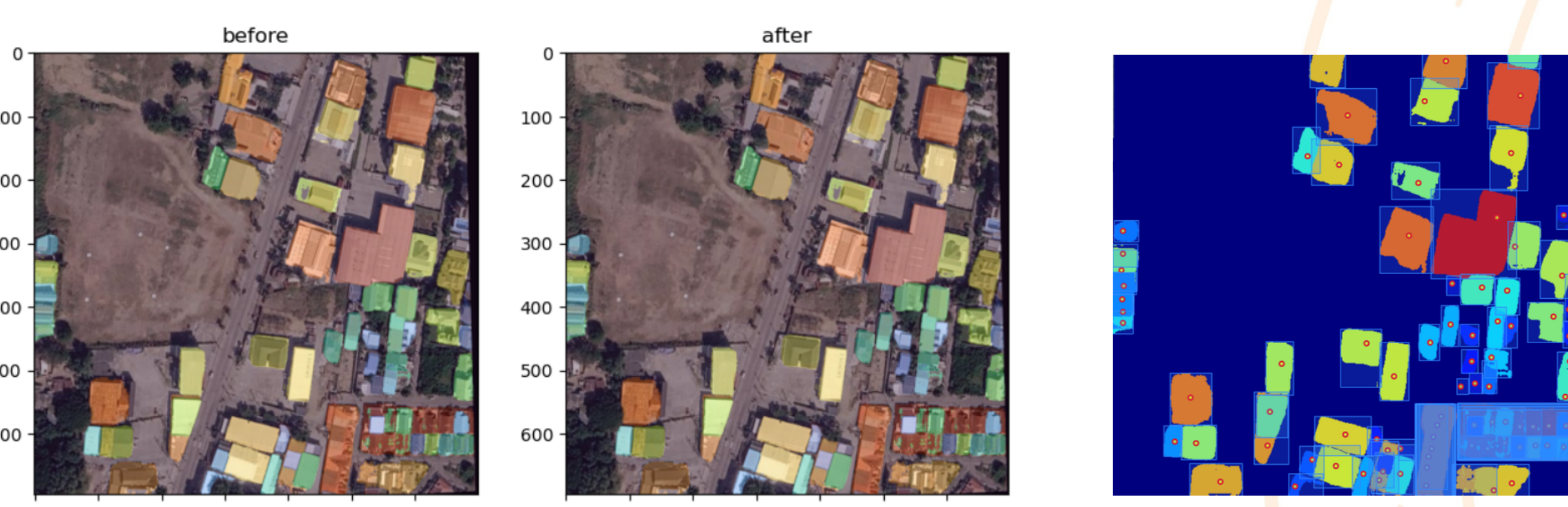


• MASKING

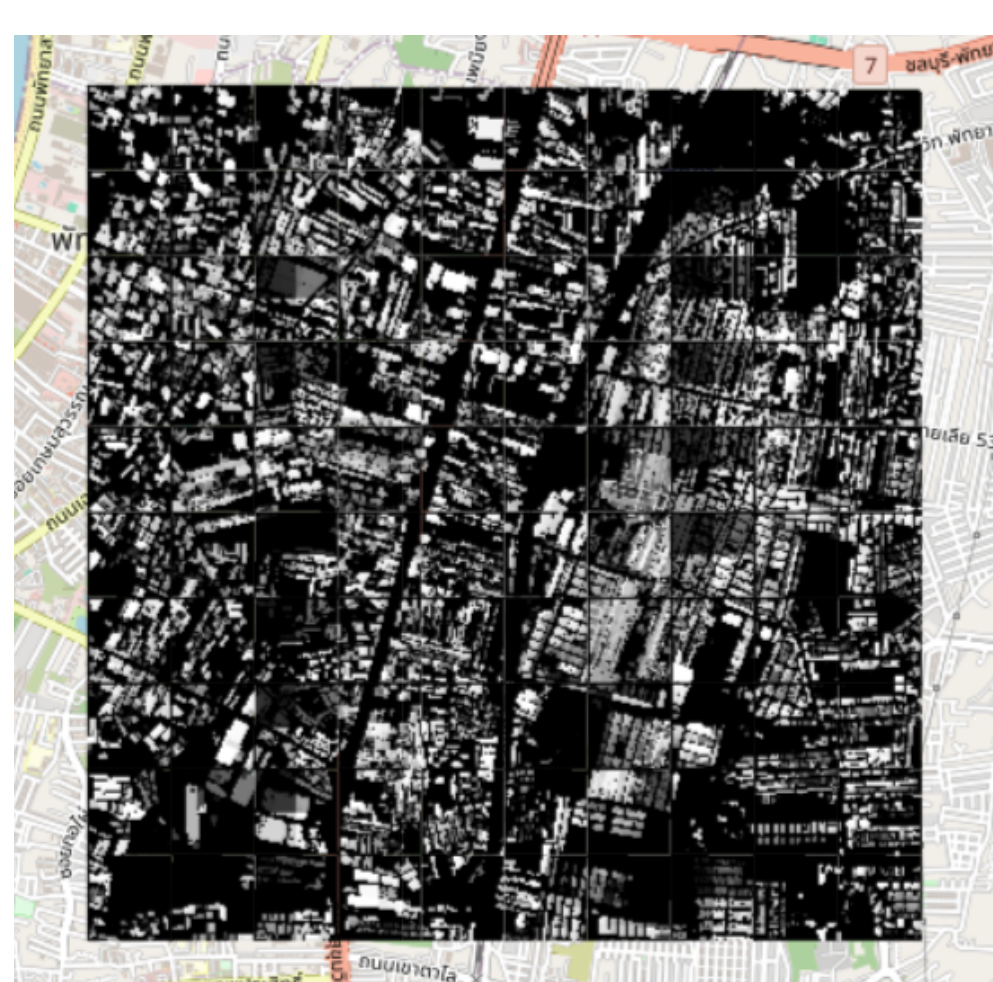


AUTOMATIC MASK
WITH SAM2

• IMPROVE MASKED RESULT



• MERGED MASK



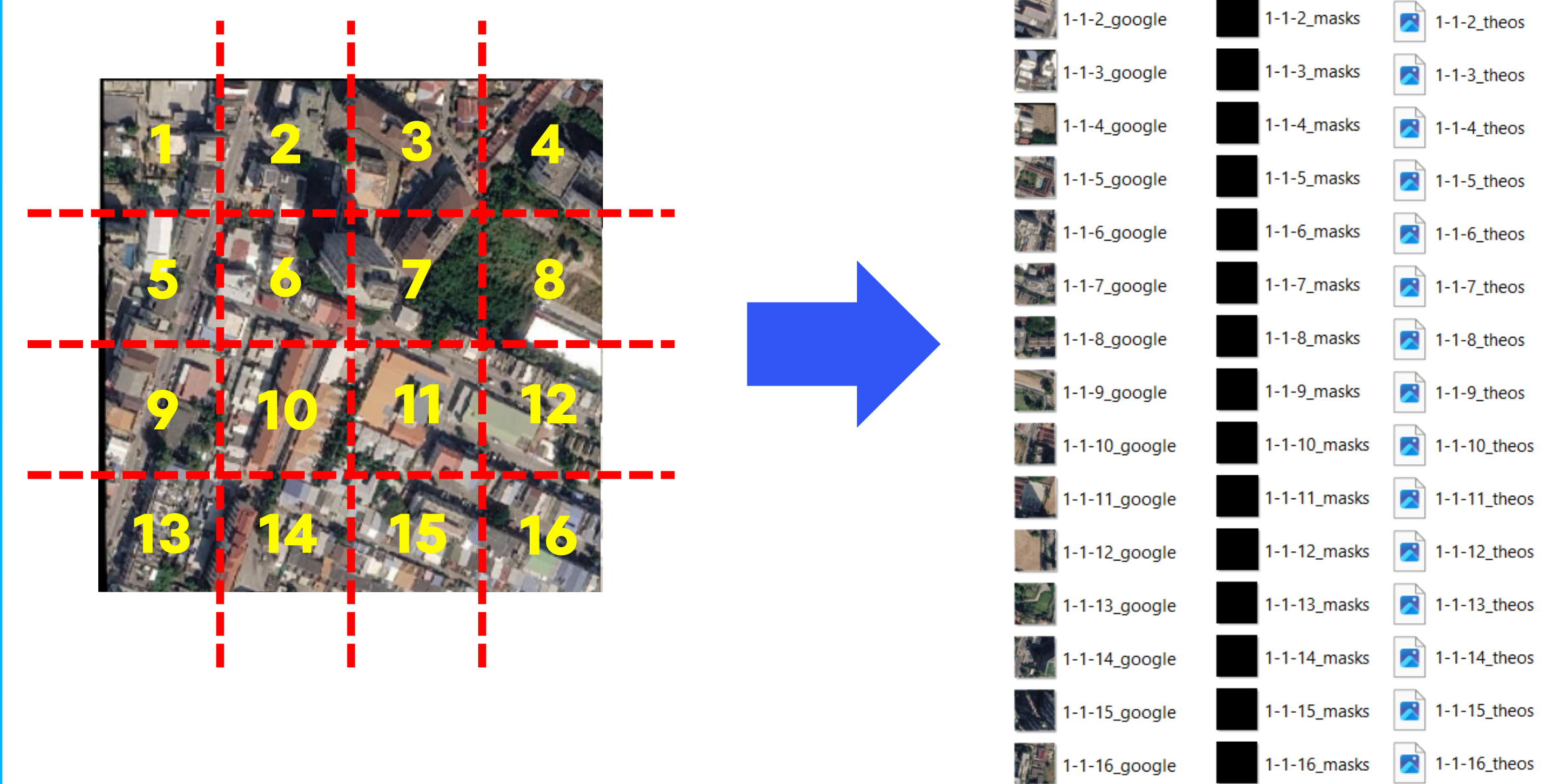
Number of building = $\text{sum}(\text{max.index}())$
= 12,441 buildings

Density = $\text{number of building/area}$
= 1,040.24 buildings/km²

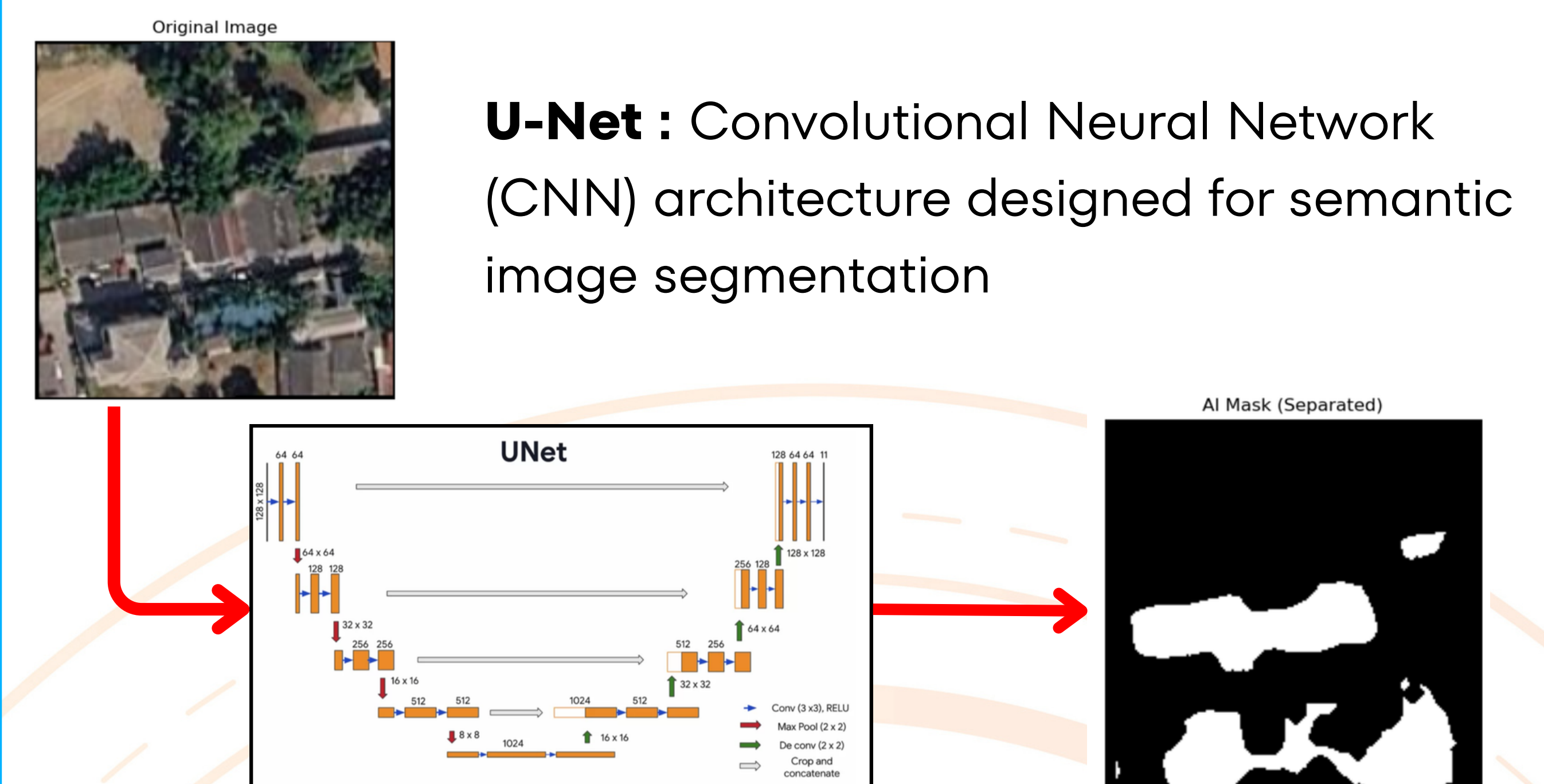
Automated Method



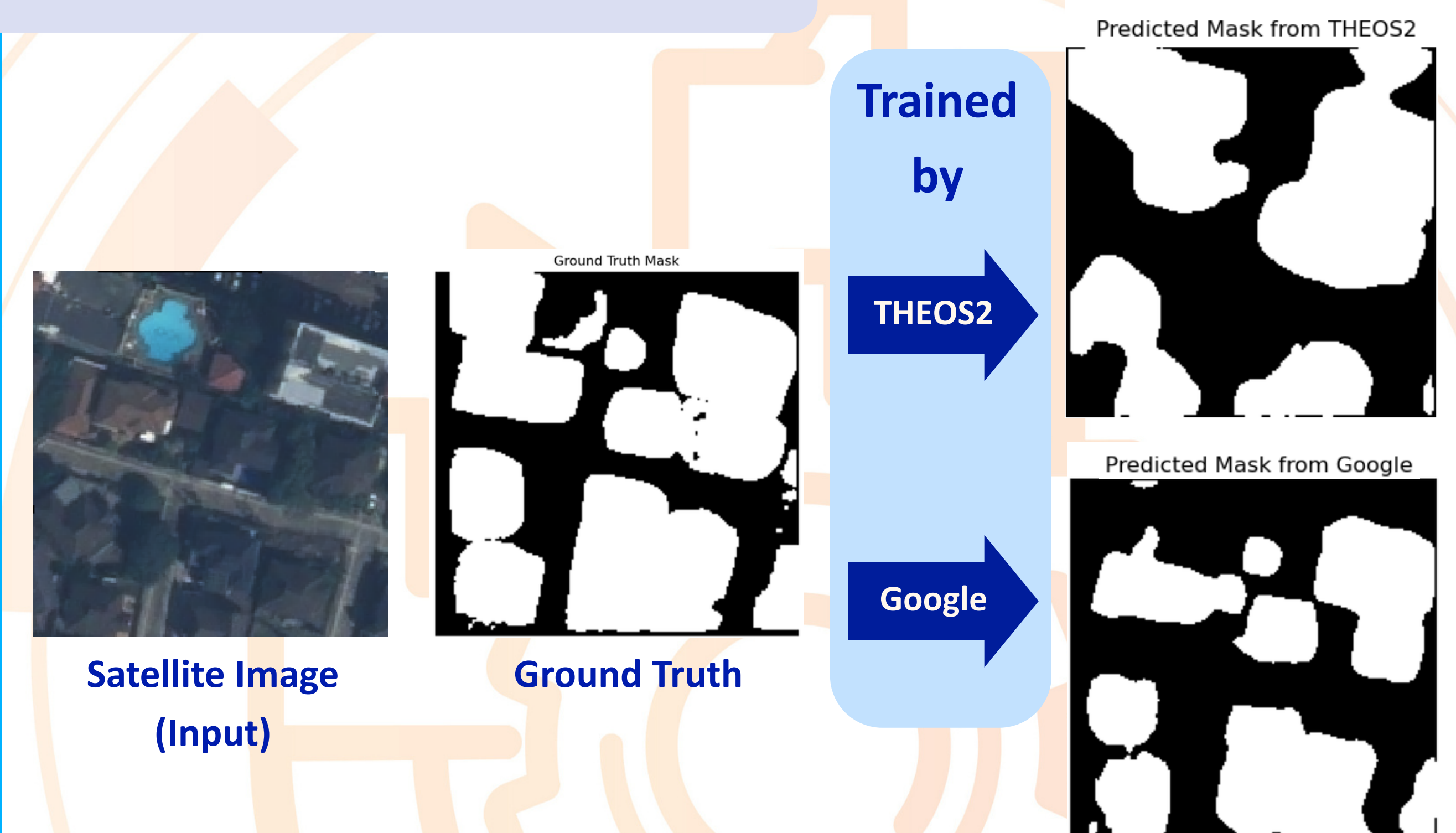
• DATA PARTITION (4X4 GRID)



• TRAINING FOR MASK PREDICTION



• VISUAL COMPARISON



• EVALUATE F1-SCORE

• Google F1-Score = 0.59
• THEOS2 F1-Score = 0.54

