



AI-based Real-time Image Extraction for Immersive Live Services - Introduction and Demos of Kirari! for Arena -

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- Objectives: Limitation of TV
- Immersive Live Experience
- NTT's Kirari! technology suite
- AI-based real-time image extraction
- Application: Kirari! for Arena

Objectives: Limitation of TV



Real things are full of experiences that TV can't broadcast

- The real size of things
- View from left, right and behind



What we're aiming at by

Immersive Live Experience



Feel the real size



What we're aiming at by

Immersive Live Experience



See from behind



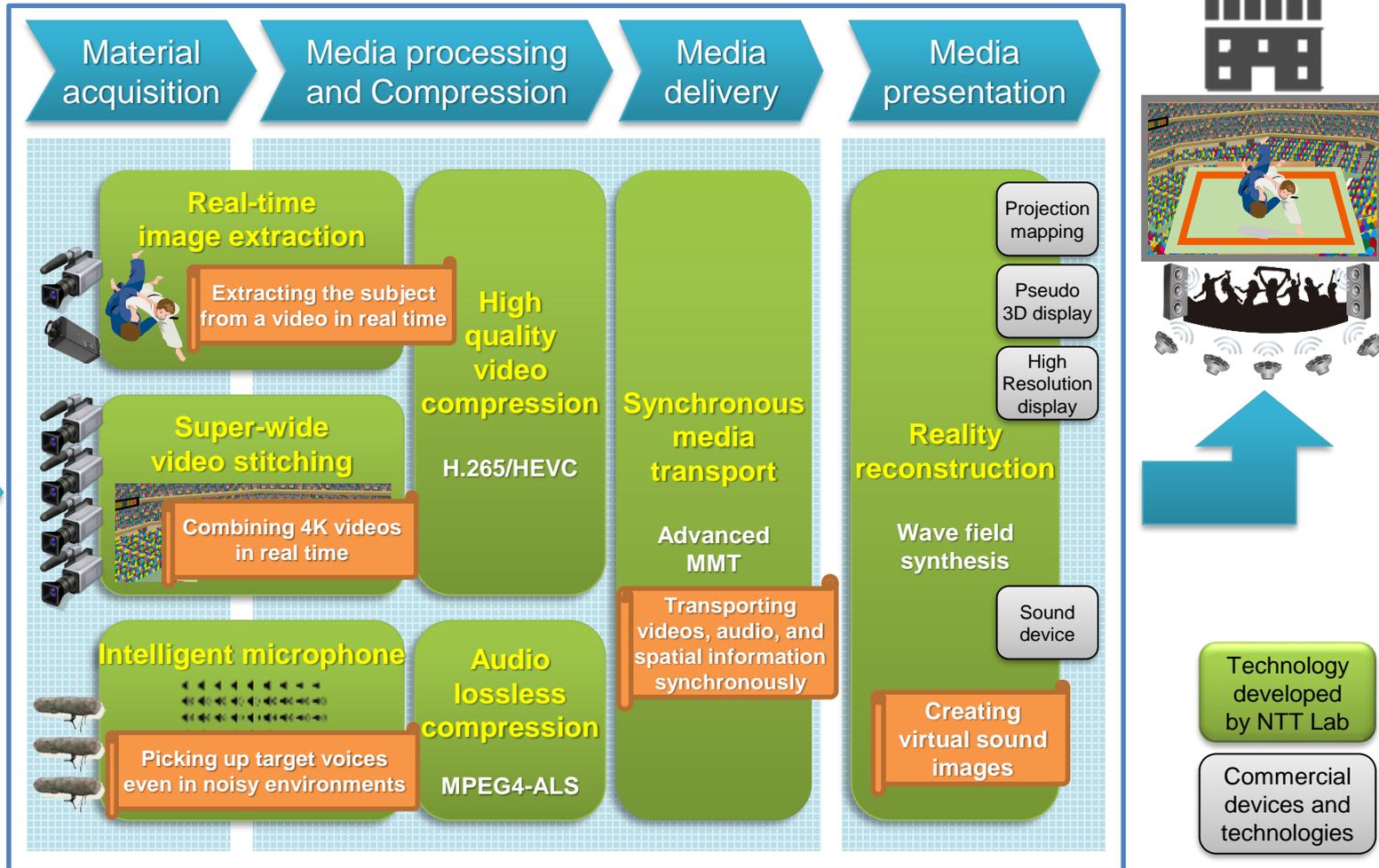
NTT's Kirari! Technology Suite



A stadium

Real-time streaming of an environment information
at a stadium to a remote venue

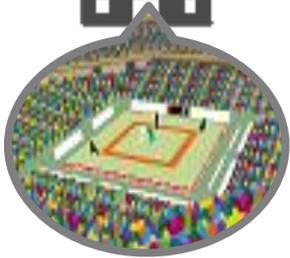
A remote venue



Kirari! Technology Suite



A stadium



Real-time streaming of ~~... information~~
at a stadium



AI-based real-time image extraction



Background / foreground classification by AI (artificial intelligence)



technologies

Kirari! Technology Suite



“Kirari!” - Japanese word “Sparkling”, “Twinkling” --Brighten your eyes!

...ed real-time image extraction



Background / foreground classification by AI (artificial intelligence)

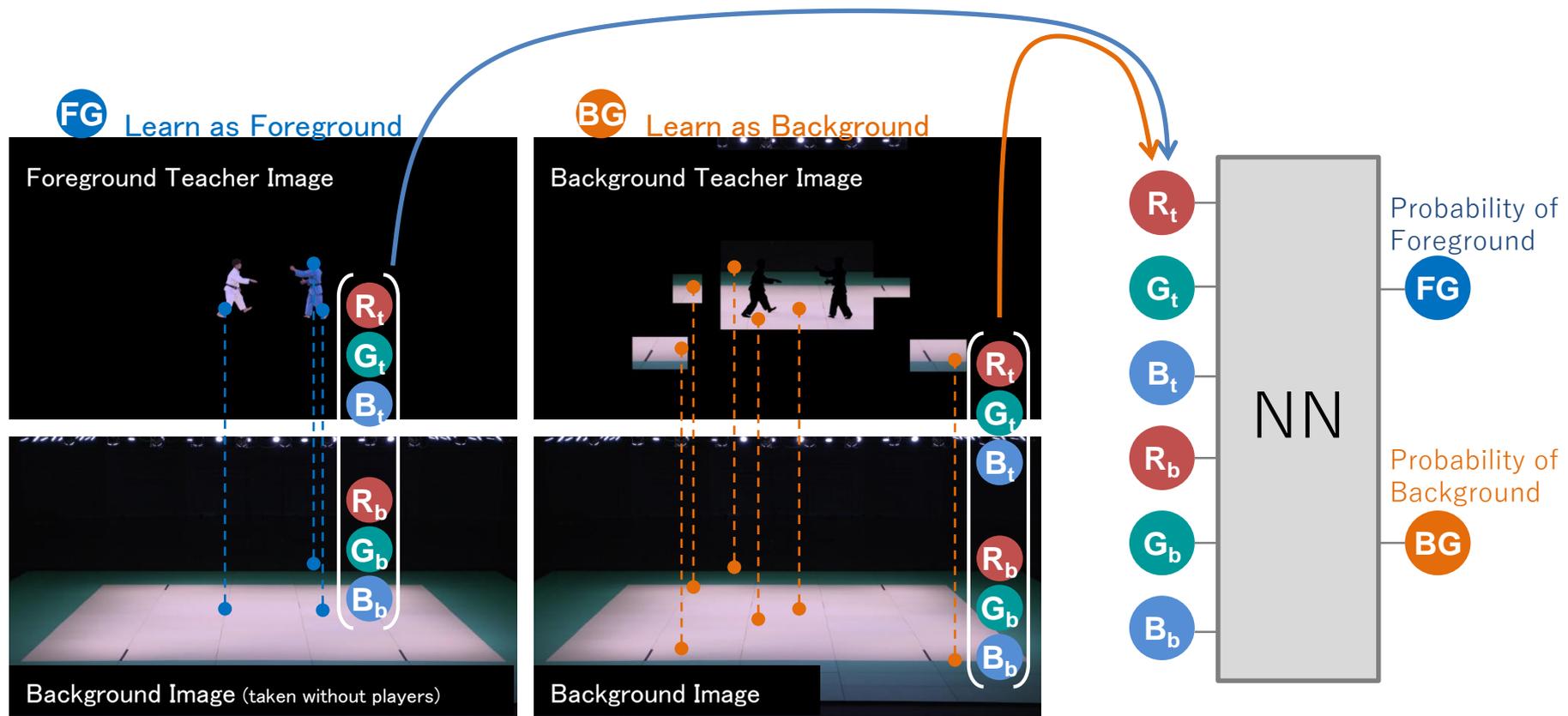


technologies

AI-based real-time image extraction



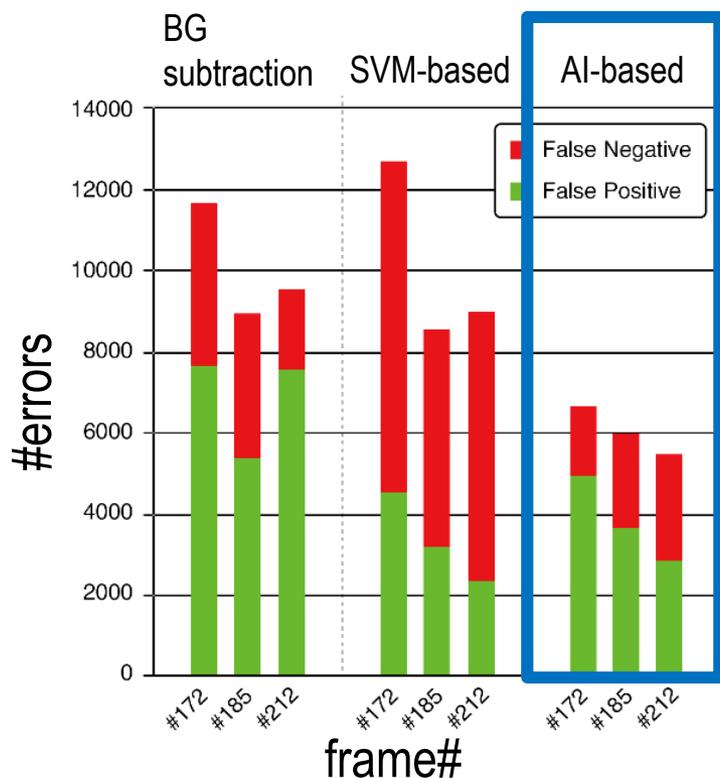
Learn the color pairs (6-D) of foreground and background by neural network (NN)



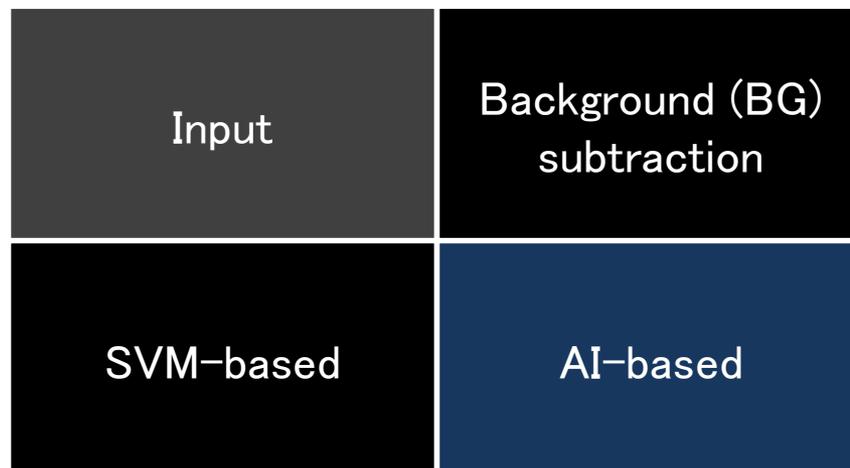
Extraction result



Better result than SVM-based extraction



See video (next slide)



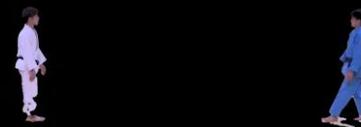
Extraction result



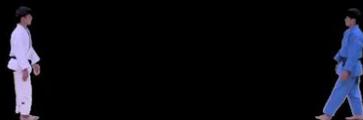
入力映像



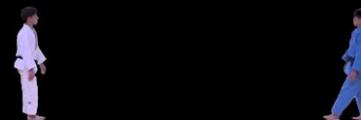
①一般的な背景差分



②SVMベースの背景差分



③NNベースの背景差分

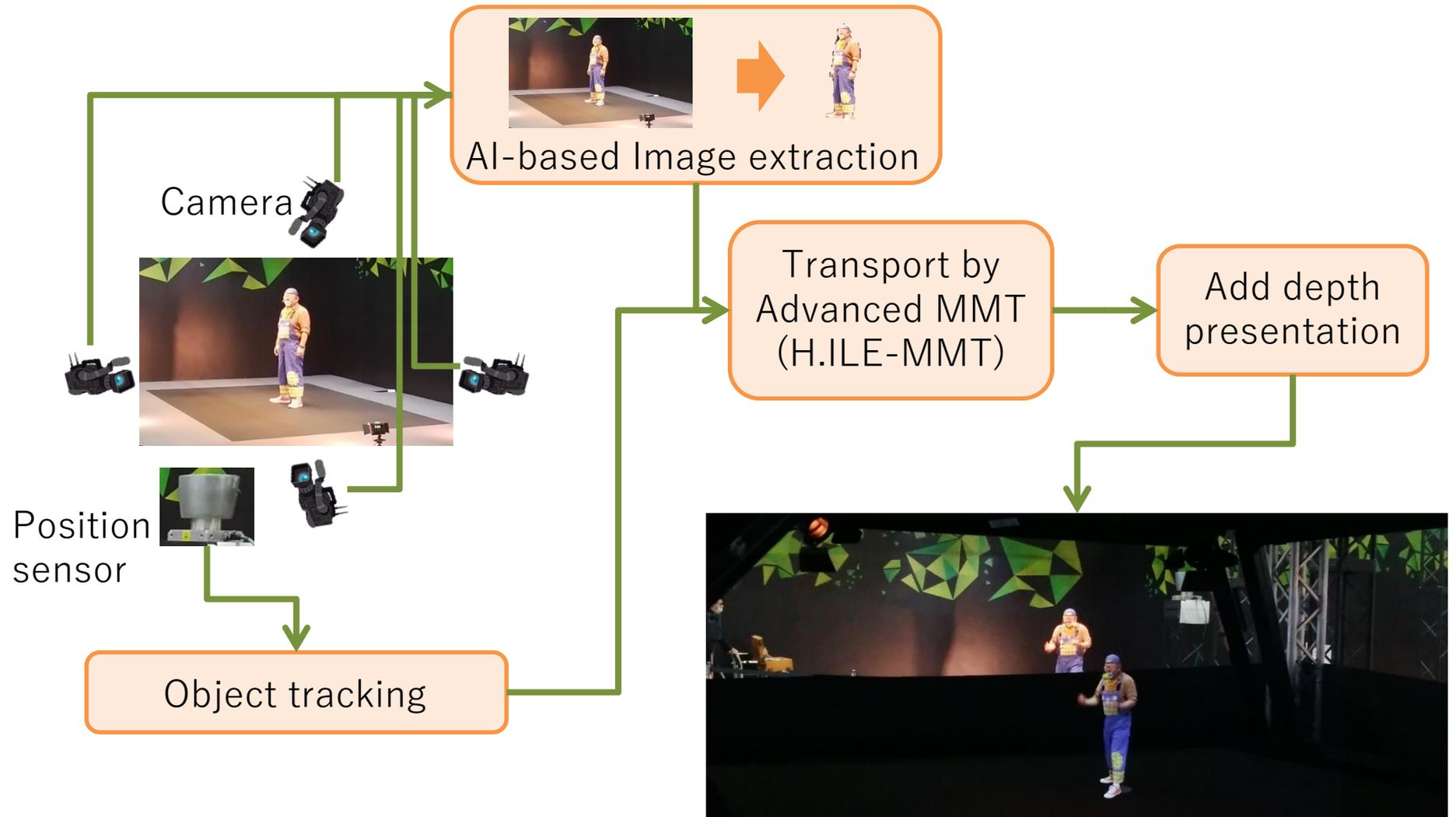


AI-extracted image



- Aerial image by Pepper's ghost
- Views from 4 directions (front, rear, left, right)
- Real-time
- Depth perception

Kirari! for Arena system configuration



Kirari! for Arena



Innovative R&D by NTT



Future developments

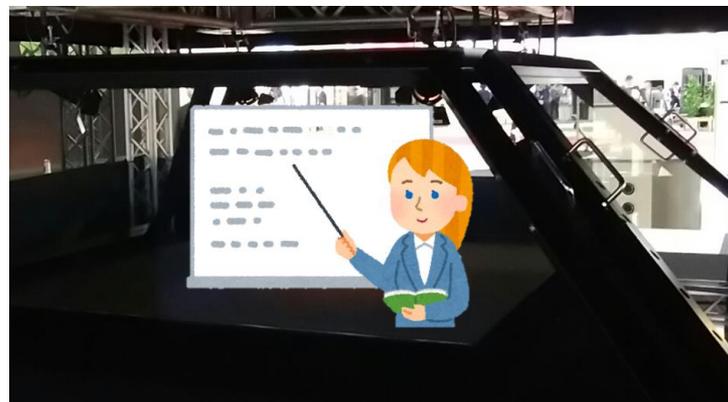


Innovative R&D by NTT

Remote surgery



Education



Adult Care Service



Future AI challenge



Back view **without** back camera





Join us in Q8/16 Sessions

- March 22: 0930-1745 (finished)
- March 26: 1430-1745
- March 27: 1115-1230 [1430-1545]



Innovative R&D by NTT

Thank you for your kind attention