

SET eXPerience Introduction of Versatile Video Coding (VVC)

NEC Corporation

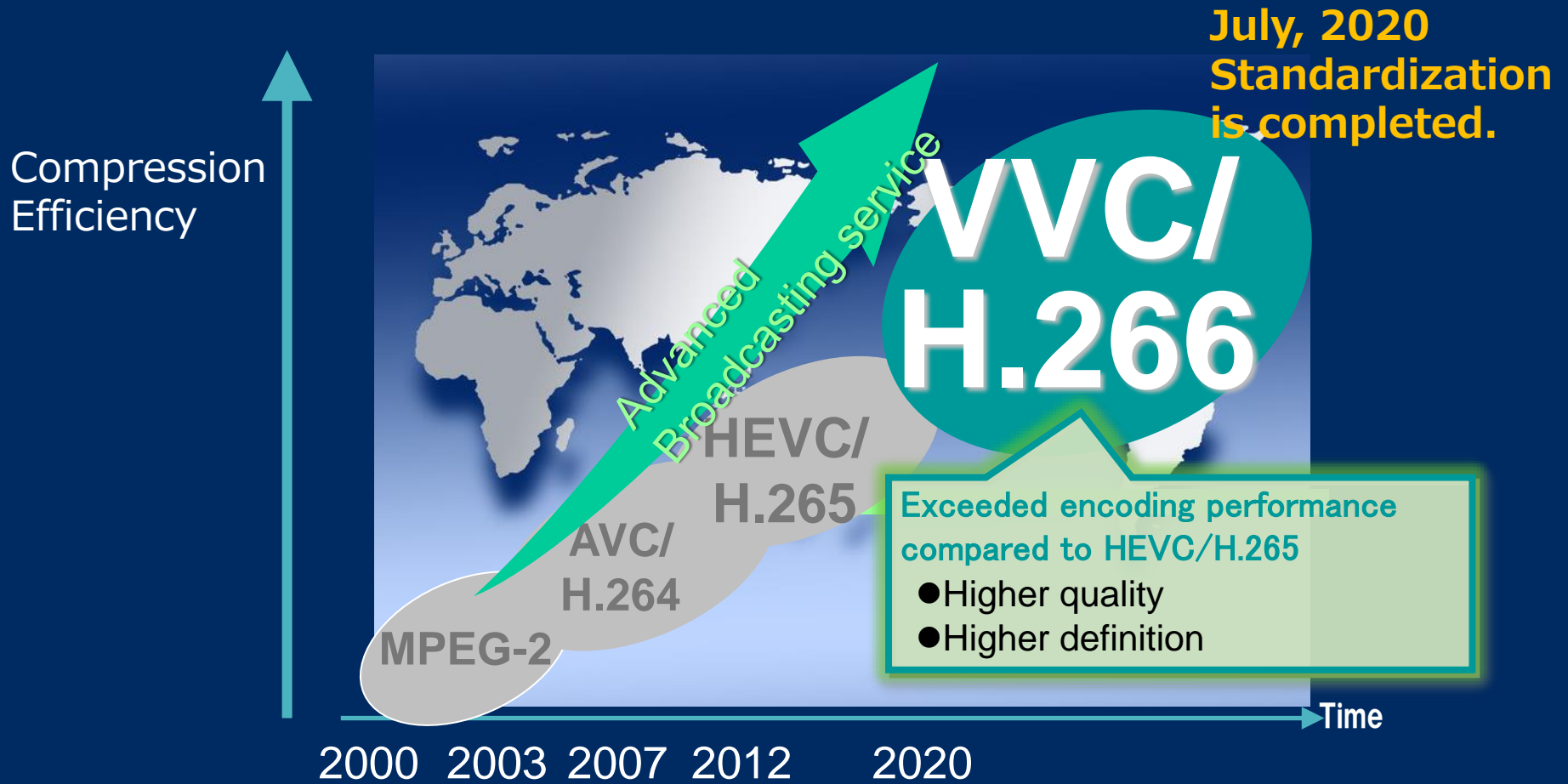
What's Versatile Video Coding (VVC)

- VVC is the latest video coding standard developed by Joint Video Exploration Team (JVET) formed by ITU-T VCEG and ISO/IEC MPEG.
- VVC is registered as ITU-T Recommendation H.266 | ISO/IEC 23090-3.
- Higher video quality and lower bit rate can be achieved than HEVC (H.265).

Expected Usage

- 4K/8K Terrestrial Broadcasting
- 4K/8K video contribution and distribution by 5G network.
- Contribution of VR contents etc.

History of Video Encoding standard and Broadcasting Service



Key technology ① Block division by adopting recursive multi tree.

More flexible way of division than HEVC by newly adopting binary tree/ternary tree.



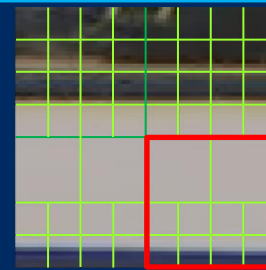
Quad tree



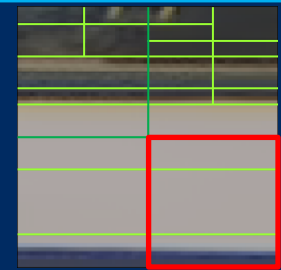
NEW! Binary tree



NEW! Ternary tree

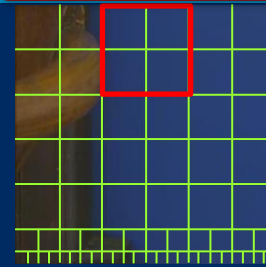


HEVC

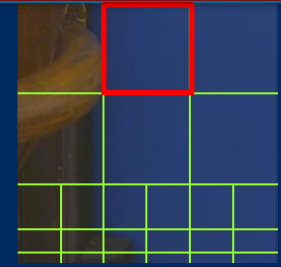


VVC

Avoiding redundant division



HEVC



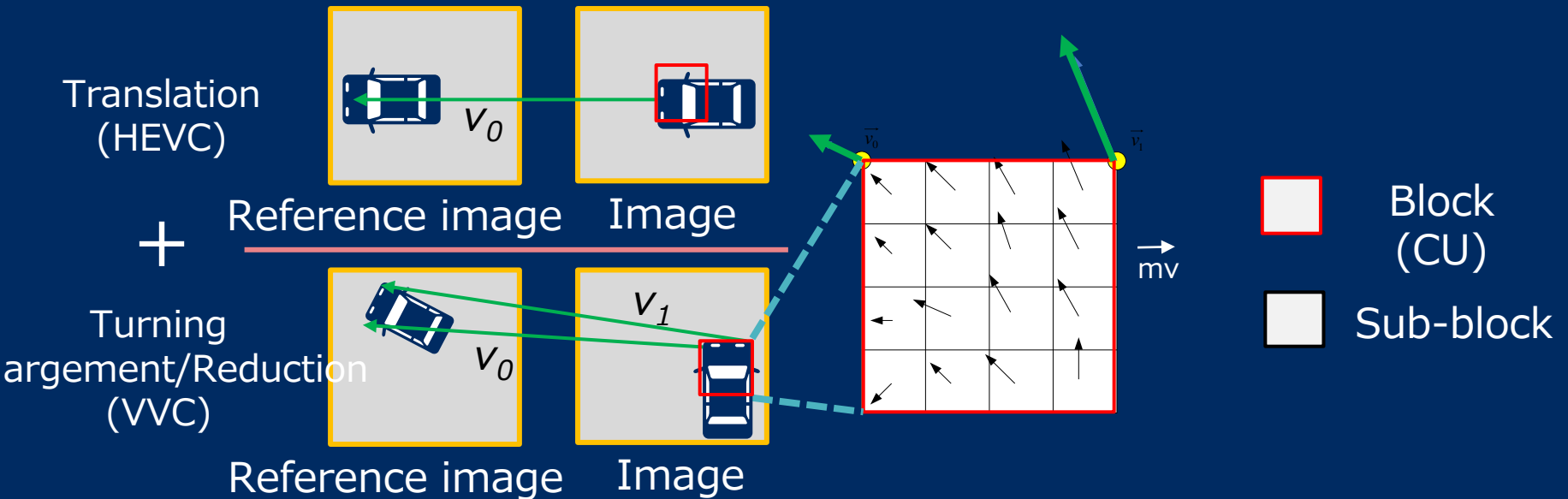
VVC

Transmission efficiency of monotony are

Key technology② A variety of Inter prediction -affine prediction

Achieving more flexible prediction for turning, enlargement and reduction.

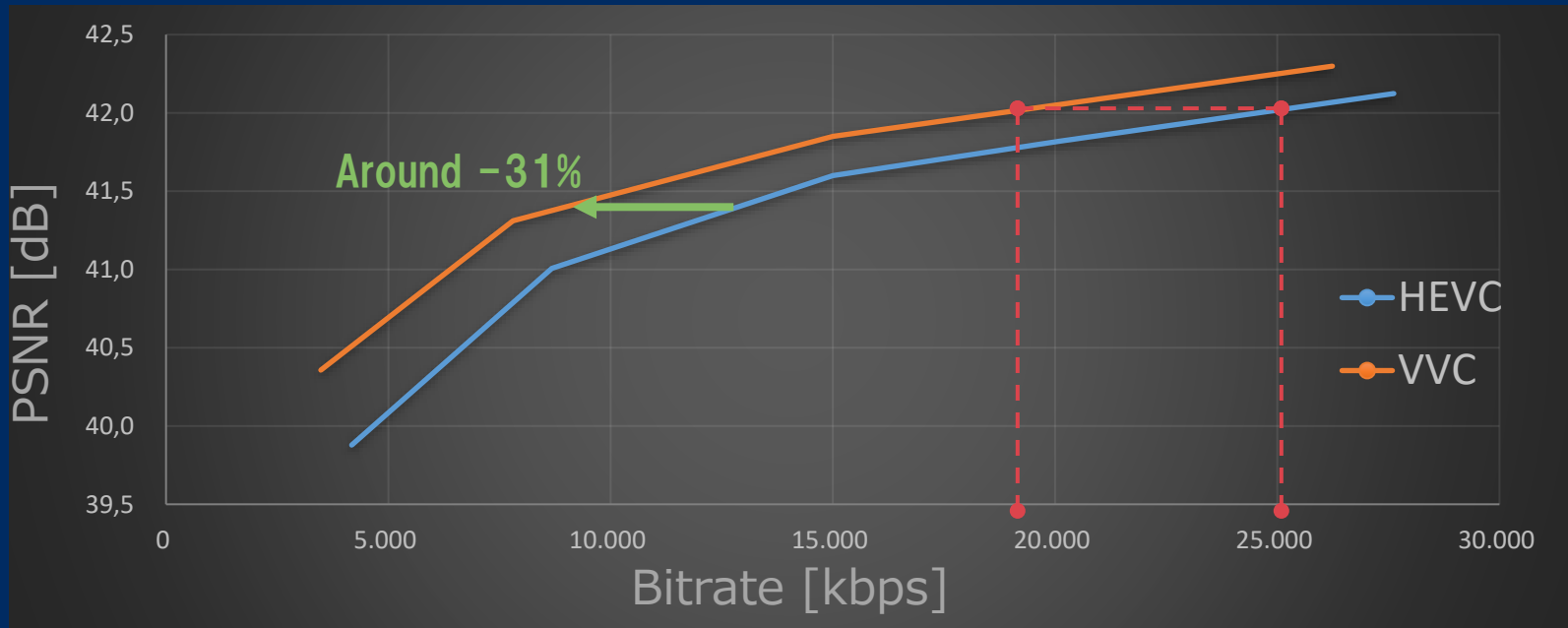
Encoding movement of 2 points (v_0, v_1) and deriving movements of each sub-block (mv) from movement of (v_0, v_1).



Compression performance

Improvement on compression efficiency by 30% compared to HEVC.

High Video quality ↑



※ PSNR : Peak Signal-to-Noise Ratio

Source : ITE 4K-C, fireworks

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