

# Introduction of Versatile Video Coding (VVC)

NEC Corporation

# Versatile Video Coding (VVC)

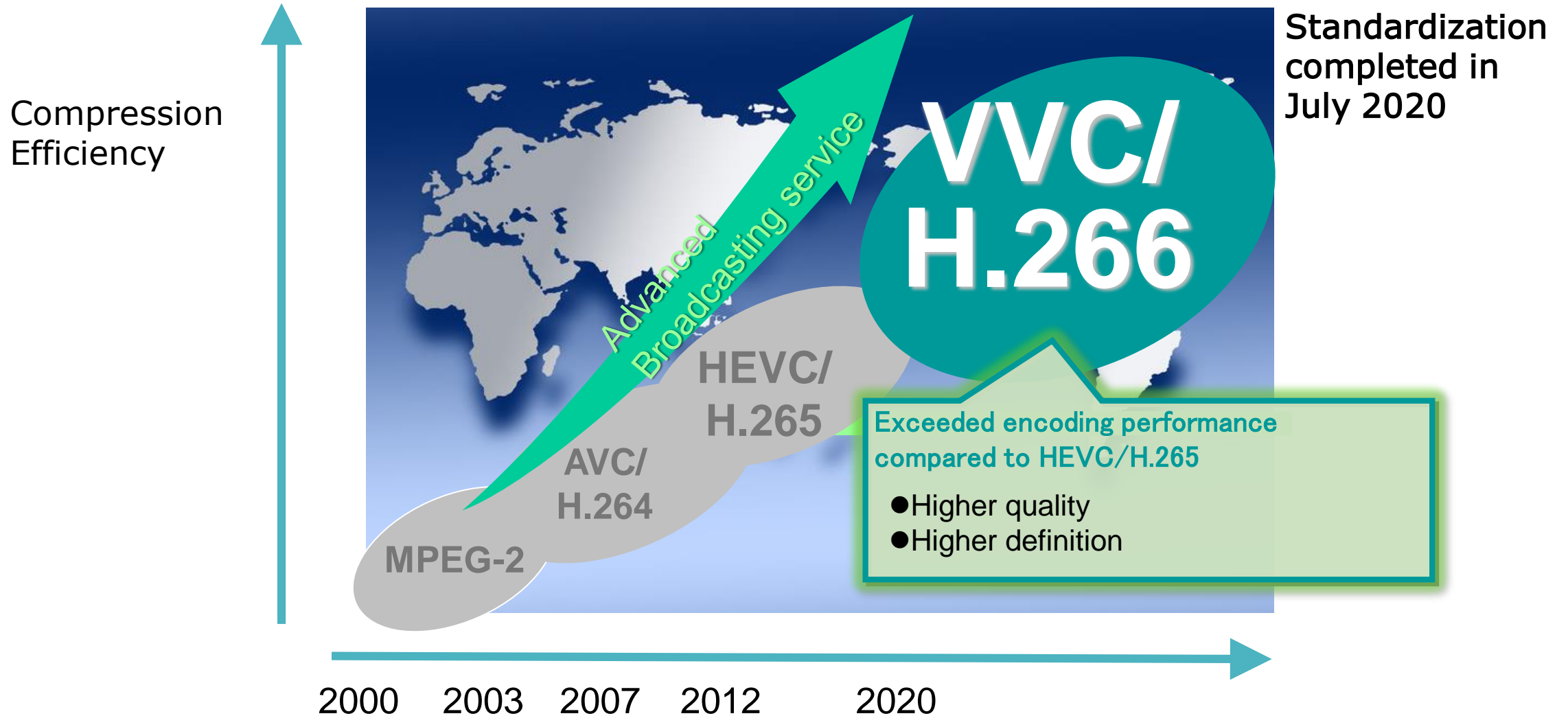
## What is Versatile Video Coding (VVC)

- 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.

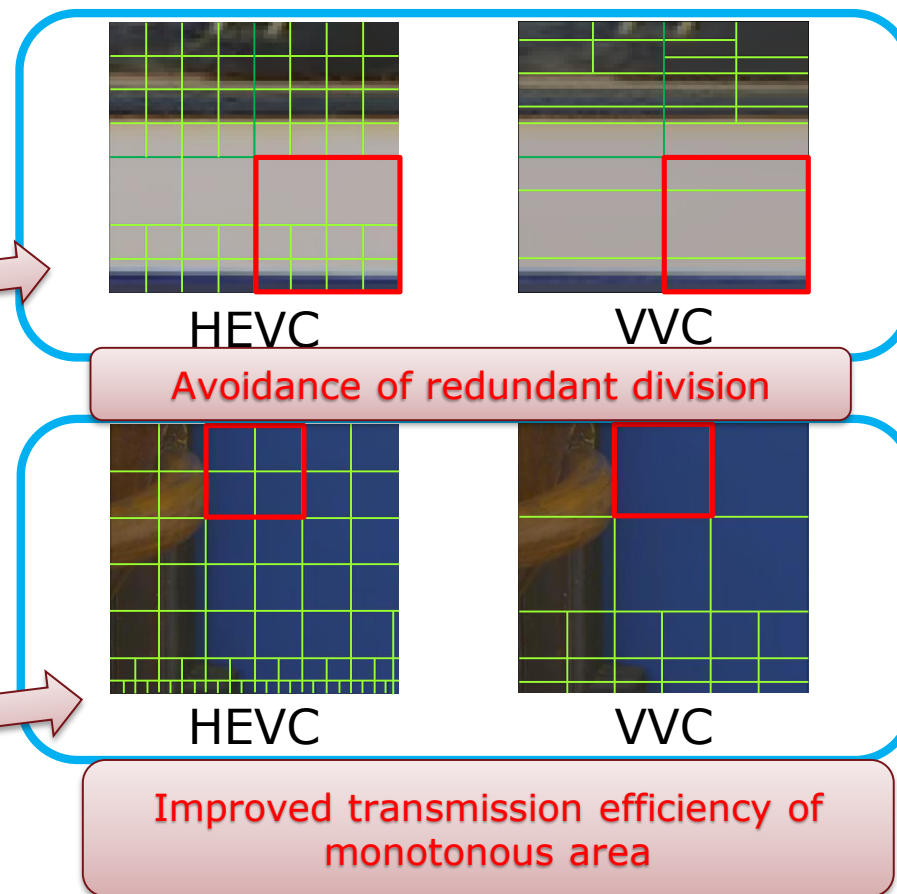
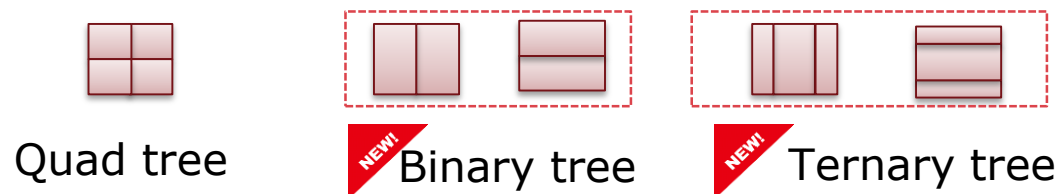
# History of video encoding standard and broadcasting service



# Elemental technology of VVC

Key technology ⊖ Block division by adopting recursive multi tree.

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

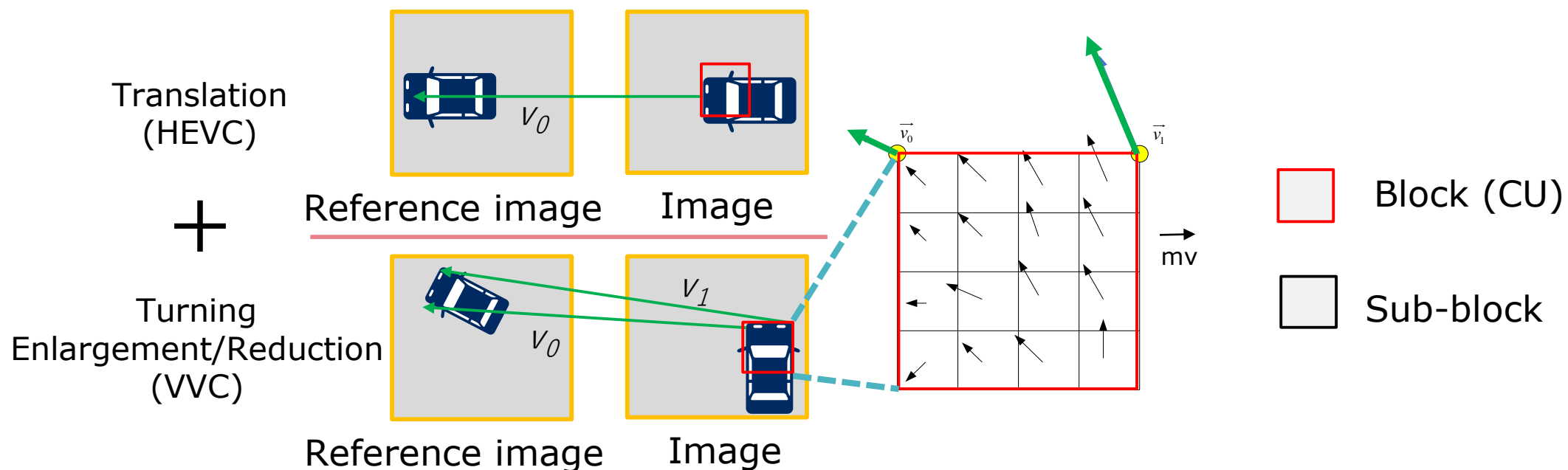


# Elemental technology of VVC

## Key technology② A variety of Inter prediction -affine prediction

Achieving more flexible prediction for turning, enlargement and reduction.

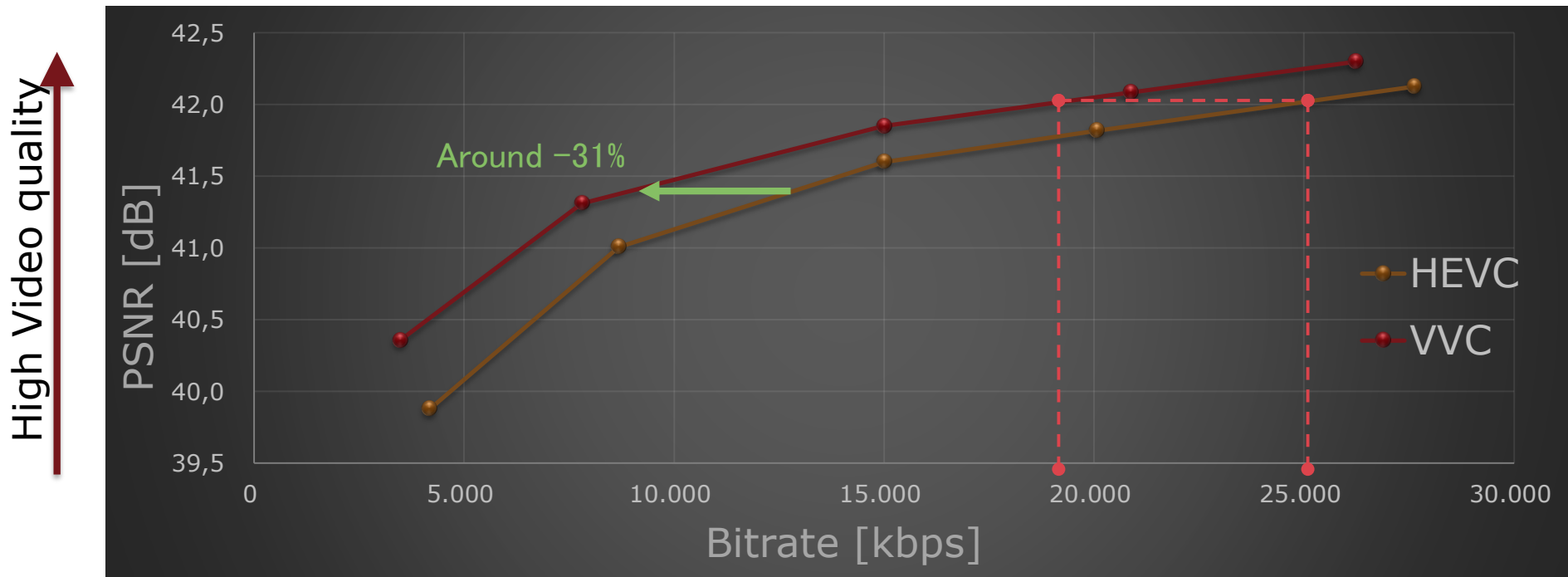
*Encoding movement of 2 points ( $v_0, v_1$ ) and deriving movements of each sub-block ( $mv$ ) from movement of ( $v_0, v_1$ ).*



# Compression performance of VVC

## Compression performance

Improvement on compression efficiency by 30% compared to HEVC.



※ PSNR : Peak Signal-to-Noise Ratio

Source : ITE 4K-C, fireworks

\Orchestrating a brighter world

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