MULTI-RESOLUTION VIEW SYNTHESIS

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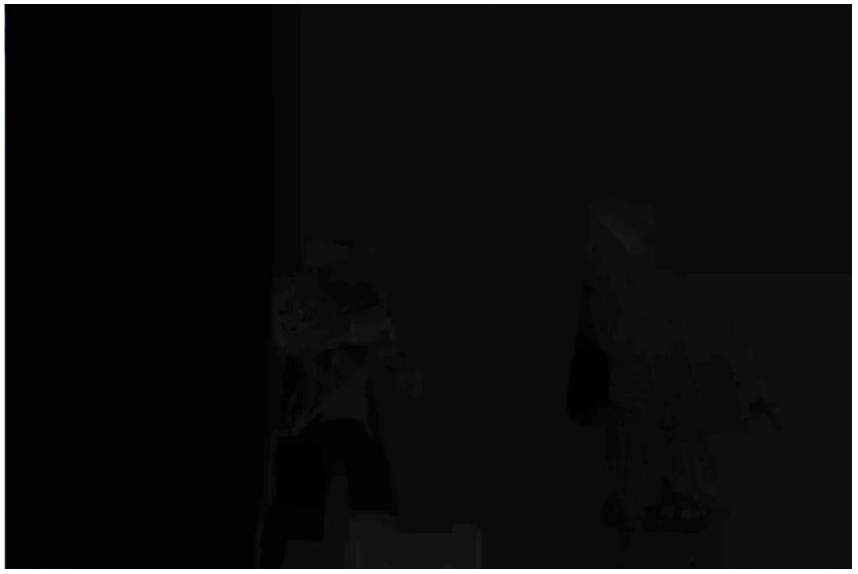
Depth Map Estimation

Experiment : 1



Experiment : 2

DepthEstimation Software
(Courtesy: Ericsson)

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Motivation

Multiview View Interpolation

via

Multi-resolution View Analysis & Synthesis

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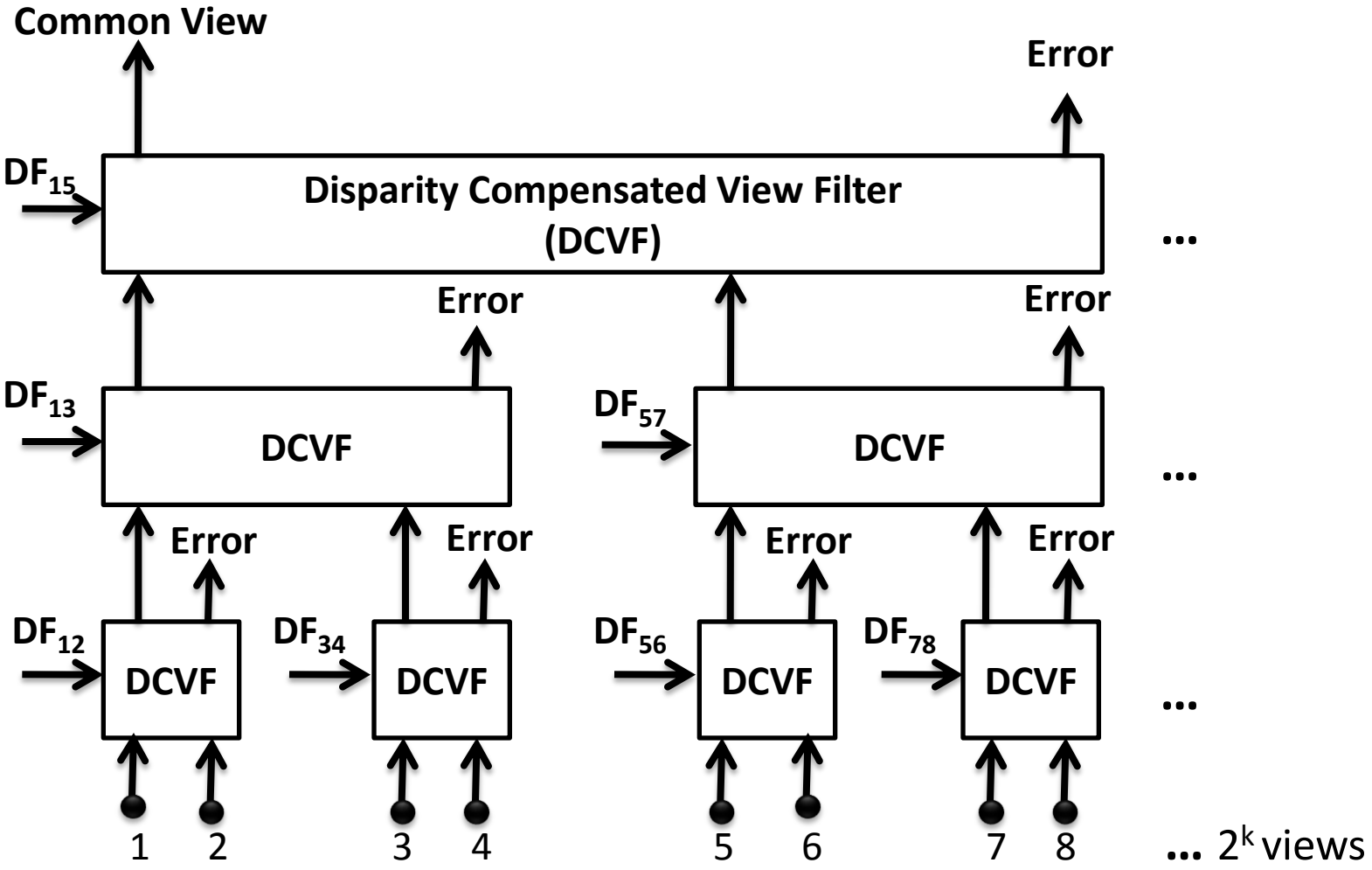
Multi-resolution View Analysis



Multi-resolution Disparity Field, MRDF={D_{ij}}

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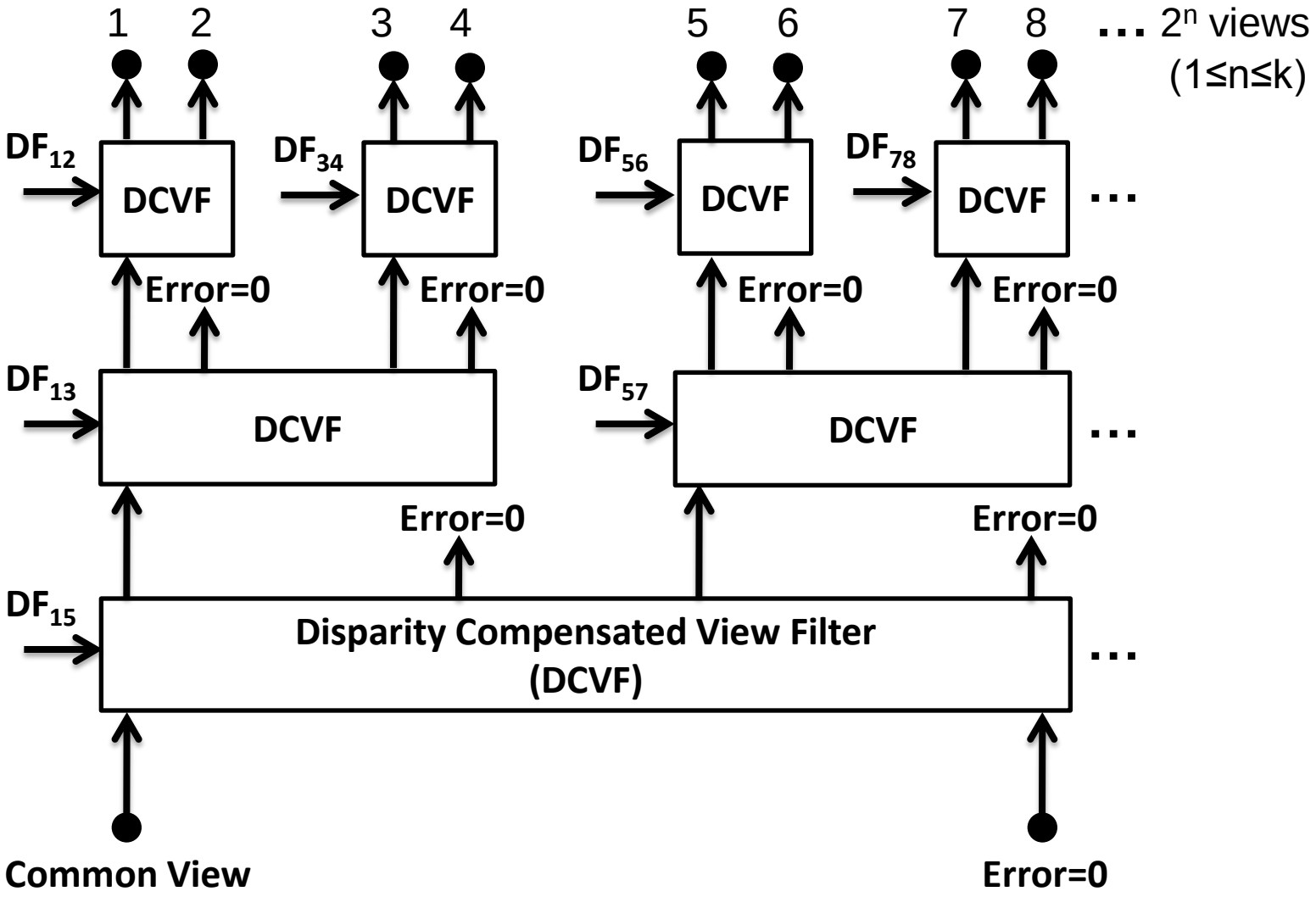
Multi-resolution View Synthesis



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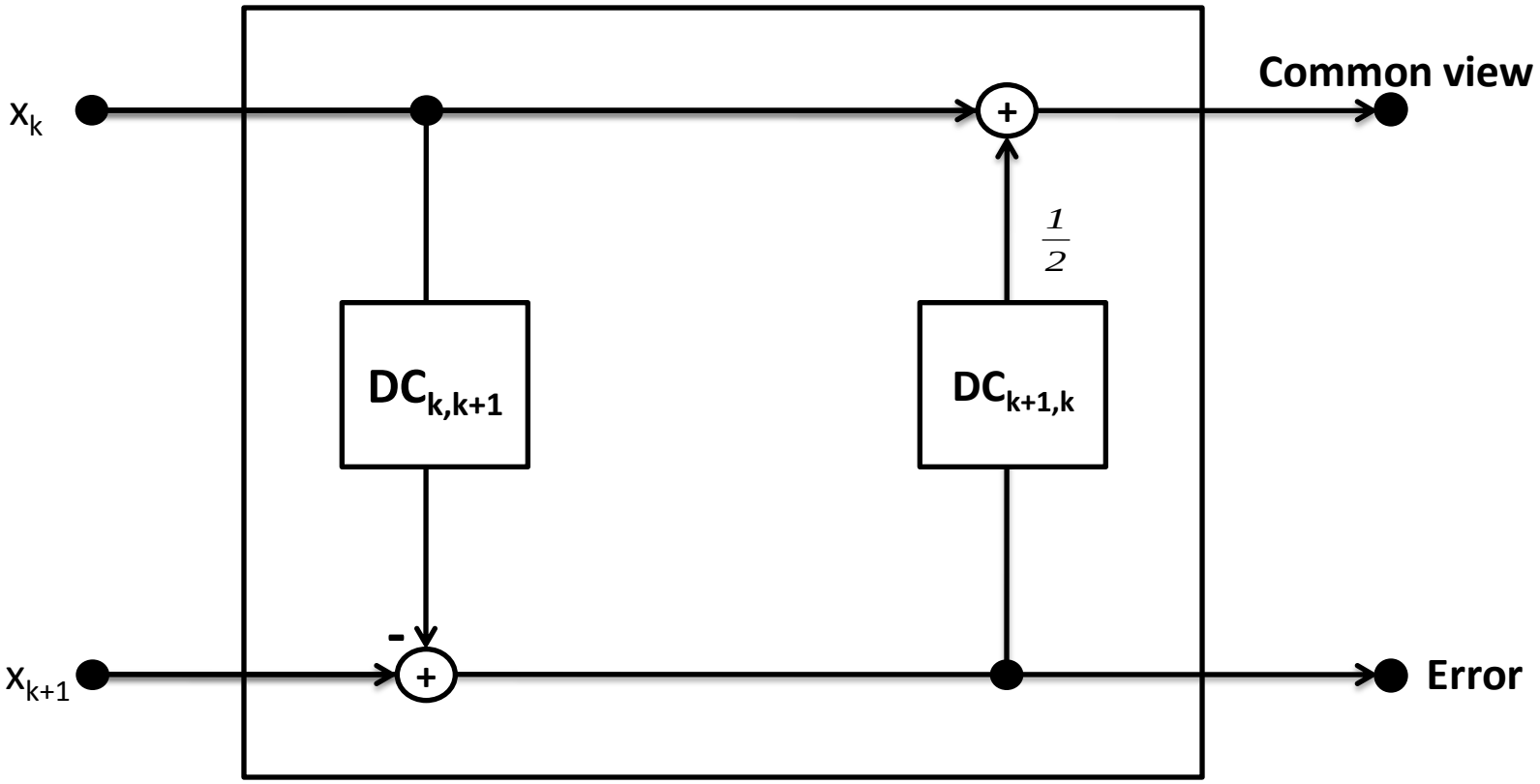
Disparity Compensated View Filter

For example: "**Haar Wavelet**" type filter



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Efficient Representation for MRDF

Goal

Represent the MRDF by ***"one depth image"*** via **"suitable"** geometry model

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Input Parameters Configuration

Experiment : 1

Input Parameters	Value	Details
Baseline Basis	1	# 0...minimum baseline, 1...maximum baseline, 2...left baseline, 3...right baseline
Smoothing Coefficient	2.0	# Smoothing coefficient to compute depth maps
Precision	2	# 1...Integer-pel, 2...Half-pel, 4...Quater-pel
Search Level	1	# 1...Integer-pel, 2...Half-pel, 4...Quater-pel
Filter	1	# 0...(Bi)-linear, 1...(Bi)-Cubic, 2...MPEG-4 AVC 6-tap
Matching Method	1	# 0...Conventional, 1...Disparity-based, 2...Homography-based

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Input Parameters Configuration

Experiment : 2

Input Parameters	Value	Details
Baseline Basis	1	# 0...minimum baseline, 1...maximum baseline, 2...left baseline, 3...right baseline
Smoothing Coefficient	4.0	# Smoothing coefficient to compute depth maps
Precision	4	# 1...Integer-pel, 2...Half-pel, 4...Quater-pel
Search Level	4	# 1...Integer-pel, 2...Half-pel, 4...Quater-pel
Filter	1	# 0...(Bi)-linear, 1...(Bi)-Cubic, 2...MPEG-4 AVC 6-tap
Matching Method	2	# 0...Conventional, 1...Disparity-based, 2...Homography-based

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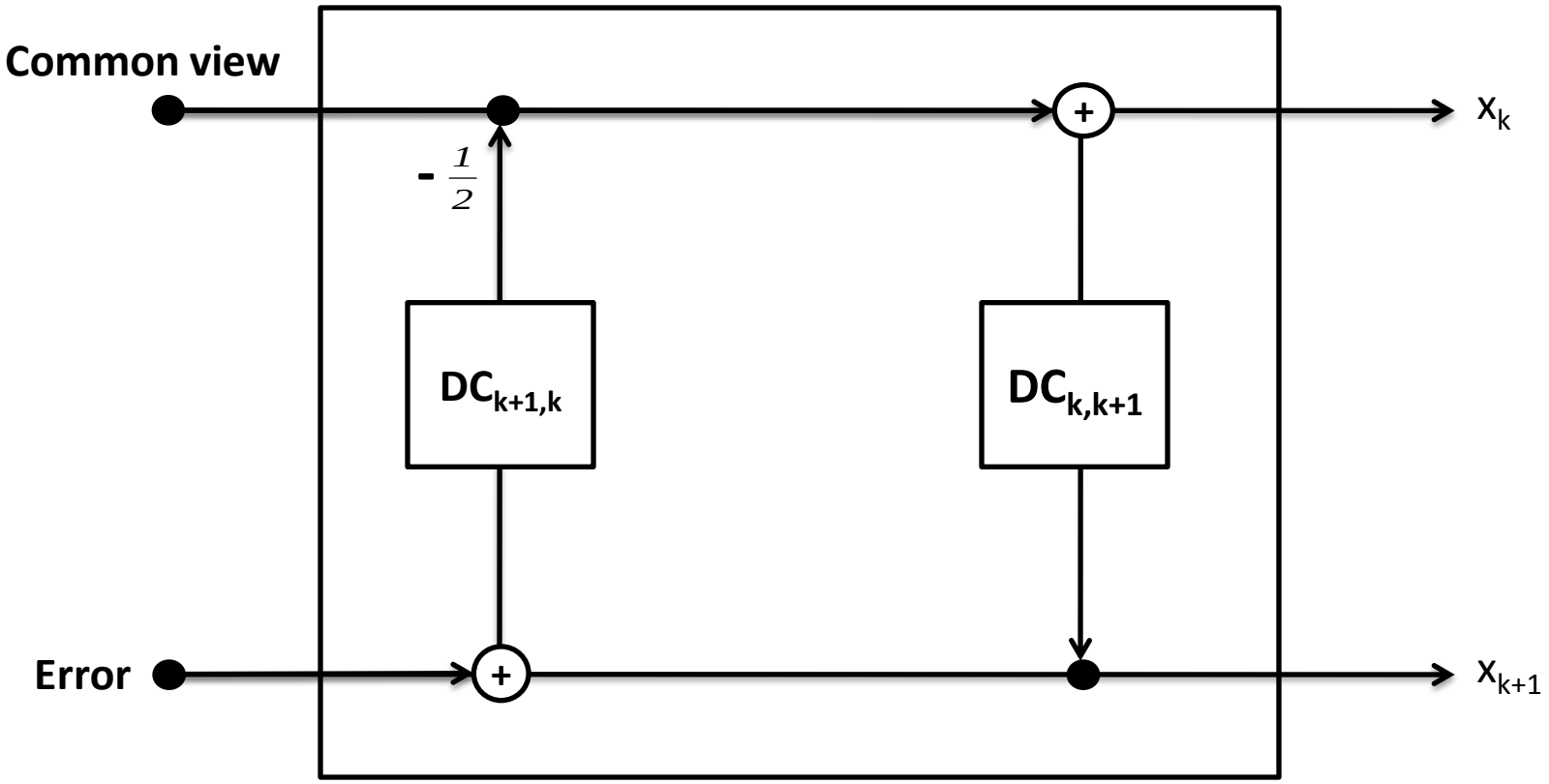
Disparity Compensated View Filter (Synthesis)



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Why go for MRVS?

- To improve visual quality of reconstructed views
- To better utilization of available bandwidth