



SDK Developer Reference for AVC FEI

API Version 1.25

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Overview

The SDK (Software Development Kit) is a software development library that exposes the media acceleration capabilities of Intel platforms for decoding, encoding and video preprocessing.

This document describes Flexible Encode Infrastructure extension (FEI) of the SDK for fine-tuning of hardware encoding pipeline. Please refer to the *SDK API Reference Manual* for a complete description of the API.

	It is intended for trusted experts, not for the broad adoption.
	FEI API is not foolproof. Wrong configuration parameters may lead to crashes or even system hangs.
	FEI API is not backward compatible. See also “Versioning” chapter.
	FEI API is expected to change/expand often due to customers’ feedback.
	Validation is limited to usage models defined in “Usage models” chapter.

Document Conventions

The SDK API uses the Verdana typeface for normal prose. With the exception of section headings and the table of contents, all code-related items appear in the *Courier New* typeface (`mxStatus` and `MFxInit`). All class-related items appear in all cap boldface, such as **DECODE** and **ENCODE**. Member functions appear in initial cap boldface, such as **Init** and **Reset**, and these refer to members of all classes, **DECODE**, **ENCODE** and **VPP**. Hyperlinks appear in underlined boldface, such as **mfStatus**.

Acronyms and Abbreviations

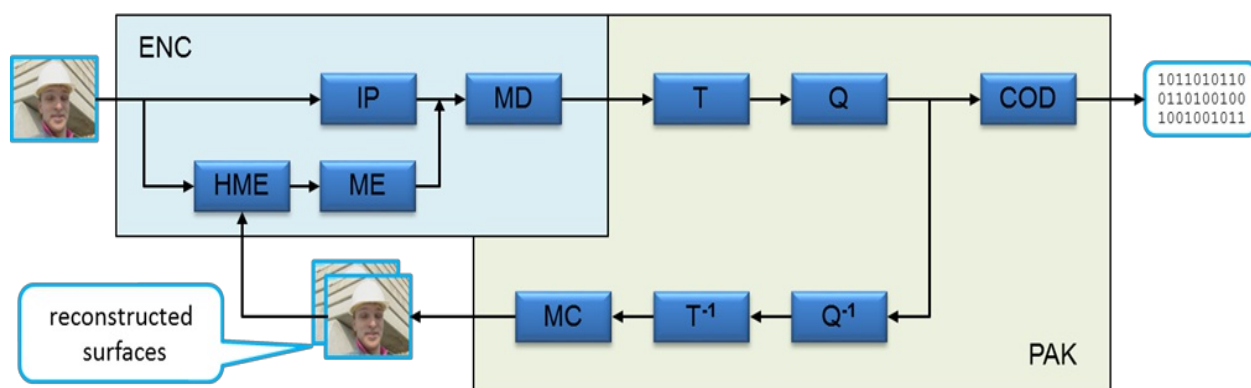
SDK	Intel® Media Server Studio - SDK and Intel® Integrated Native Developer Environment Media SDK for Windows
FEI	Flexible Encode Infrastructure
ENC	ENCode – first stage of encoding process that include motion estimation and MB mode decision.
PAK	PAck – last stage of encoding process that include bit packing.
PreENC	Pre Encoding
MV	Motion Vector
MB	Macro Block
SPS	Sequence Parameter Set
PPS	Picture Parameter Set

Architecture

General SDK API provides **ENCODE** class of functions with broad range of configuration parameters that application developer can use to achieve quick results.

FEI adds even more controls to the **ENCODE** class of functions and introduces two new classes, **ENC** and **PAK**, that allow ultimate control over encoding process.

Figure below shows how conventional encoding pipeline is separated into **ENC** and **PAK** classes.



where

IP – intra prediction

MD – mode decision

HME – hierarchical motion estimation

ME – motion estimation

T, T⁻¹ – transform and inverse transform

Q, Q⁻¹ – quantization and inverse quantization

COD – entropy coding

MC – motion compensation

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