Turing codec

An open-source HEVC encoder

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What is the Turing codec?

Turing codec is a **practical** (read: **fast** and **efficient**)

software **video encoder** implementation

Uncompressed video → Turing codec HEVC → Compressed bitstream (...010 0100 100...)

Video coding technology is **standardised** to allow interoperability.

HEVC: state-of-the-art video compression

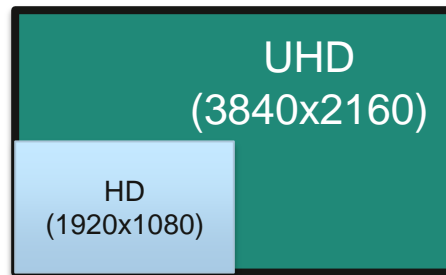**BBC** | Research & Development

Main features

Designed **from scratch** for **speed**, **efficiency**, **flexibility** and **parallelisation**

Parallel approach: **algorithmic development**

codebase optimisation

UHD
(3840x2160)

HD
(1920x1080)

Optimised for **UHD** content (4K and above)

Algorithms to reduce complexity without sacrificing efficiency
Codebase optimisations to reduce memory footprint
**One-to-one mapping with HEVC syntax**

```
if (h[transquant_bypass_enabled_flag()])
    h(cu_transquant_bypass_flag(), ae(v));

if (h[slice_type()] != I)
    h(cu_skip_flag(cu.x0, cu.y0), ae(v));

const int nCbS = (1 << cu.log2CbSize);
```

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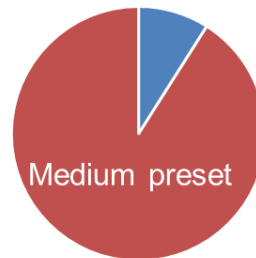
Why should I use it?

Usage is simple and streamlined: only three presets, no need to tweak cfg parameters

```
turing-exe encode --speed medium --frames 400 --input-res 3840x2160 -o out.bit input_file.yuv
```

The Turing codec is **fast**
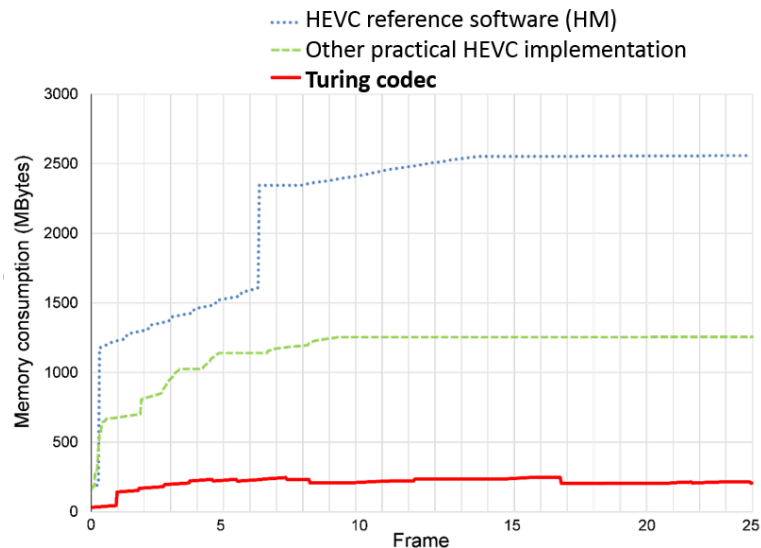
91% faster for 11% BD-rate increase

96% faster for 27% BD-rate increase

Medium preset

Fast preset

Memory requirements are **low**

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Turing codec is available now under the GPLv2 licence

Some pointers:

http://turingcodec.org

https://github.com/bbc/turingcodec

http://www.bbc.co.uk/opensource/projects/TuringCodec

Codec is under **active development:**

we are looking for **collaborators!**

Contact us at:

info@turingcodec.org

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