h264Modify

h264Modify is simple command-line utility allowing changes of some parameters of H.264 elementary video-stream. It allows modification of **frame-rate, sample-aspect-ratio, profile, constraint-flags** and **profile-level** of the H.264 encoded video **without its re-encoding**!

Changing of frame-rate can be useful for creation of slow-motion/fast-motion effect or for correction improperly encoded video, e.g. “fps-shift” 24 vs. 23.976.

Changing of sample-aspect-ratio (= pixel-aspect-ratio) can be used e.g. for enforcing proper aspect ratio when using anamorphic lens on standard camera.

In addition to these changes, **h264Modify** can insert/delete so called **frame_packing_arrangement** SEI messages which are used to signal stereoscopic mode (side-by-side, top-above-bottom, etc.)

Typical use:

1. **Displaying help**

   ```
   h264Modify
   ```

   Without any other parameters will display simple help how to use h264Modify.

2. **Displaying current picture parameters**

   ```
   h264Modify input.h264
   ```

   Without any other parameters will display current frame-rate and sample-aspect-ratio specified in relevant NAL units of given input H.264 file.

3. **Changing frame-rate**

   ```
   h264Modify input.h264 –frame_rate 23.976  output.h264
   h264Modify input.h264 –frame_rate 24000/1001  output.h264
   h264Modify input.h264 –frame_rate 50  output.h264
   ```

   These commands will change frame-rate to specified values.
   Fractions in form of “numerator/denominator” are allowed.

4. **Changing sample-aspect-ratio**

   ```
   h264Modify input.h264 -sar 4:3   output.h264
   h264Modify input.h264 –sar_idc 14 output.h264
   ```

   These commands will change sample-aspect-ratio to specified values.
   Parameter `–sar_idc` is used for setting predefined constants from H.264 specification.
   List of these values can be found in help - see scenario 1.

5. Changing H.264 profile

```
h264Modify input.h264 –profile_idc High10 output.h264
h264Modify input.h264 –profile_idc 110 output.h264
```

These commands will change profile of H.264 elementary stream. This operation must be done very carefully since profile has impact on structure of the “sequence parameter set” NAL unit of H.264 stream.
Profile verbal-codes (like High, High10) can be found in help - see scenario 1.

6. Changing H.264 constraint flags

```
h264Modify input.h264 –constraint_flags x02 output.h264
```

These commands will change **constraint_setN_flags** for profile of H.264 elementary stream (N=[0..5]).

7. Changing H.264 profile level

```
h264Modify input.h264 –level_idc 4.1 output.h264
h264Modify input.h264 –level_idc 41 output.h264
```

These commands will change profile level of H.264 elementary stream.
Profile level verbal-codes (like 4.0, 4.1) can be found in help - see scenario 1.

Remark: h264Modify cannot change at this moment H.264 elementary streams with MVC (3D), MVCD or SVC extensions. However, these H.264 variants are very rare.

Remember: h264Modify does NOT perform any semantic validation of parameters!
Improper values of parameters may create invalid or corrupted H.264 elementary stream!