

# **XBUP Project – Unified Structure**

This presentations describes principles and advantages of encoding and unified block-tree structure used in eXtensible Binary Universal Protocol.

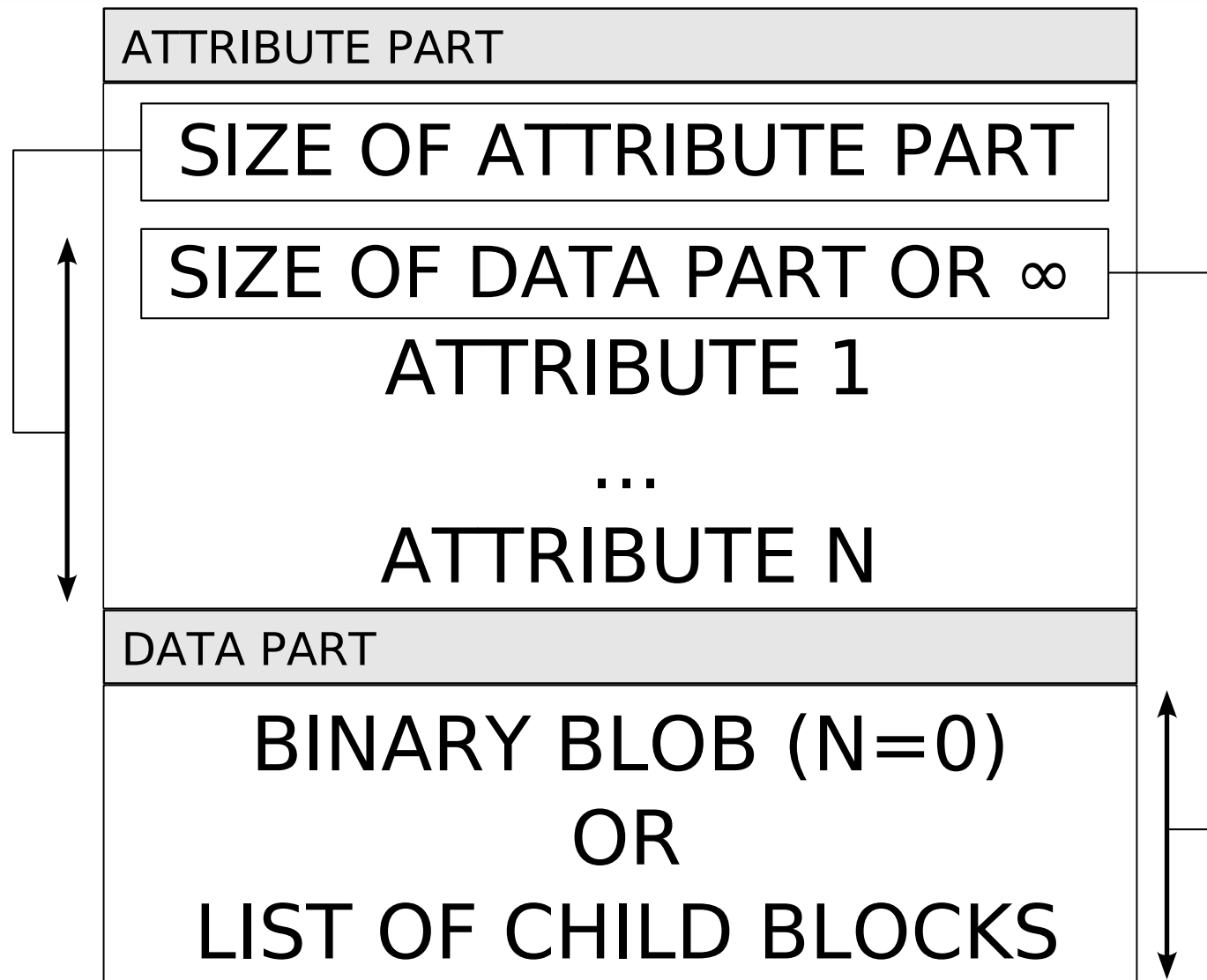
- ◆ Unlimited Unary-Binary Numeric Encoding
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# Unlimited Unary-binary Numeric Encoding

Numbers are stored in UTF-8 like encoding, first unary length and then binary value using specific recursion. Code is prefix and deterministic.

0xxxxxxx		= 0..7Fh
10xxxxxx	xxxxxxxx	= 0..3FFFh
110xxxxx	xxxxxxxx xxxxxxxx	= 0..1FFFFFh
1110xxxx	xxxxxxxx xxxxxxxx xxxxxxxx	= 0..0FFFFFFFh
...		
11111110	xxxxxxxx .. xxxxxxxx \_____ 7 times ____/	= 0..0FFFFFFFFFFFFFFFFFh
11111111	00000000 xxxxxxxx .. xxxxxxxx \added_/ \_____ 8 times ____/	= 0..0FFFFFFFFFFFFFFFFFh
11111111	00000001 xxxxxxxx .. xxxxxxxx \added_/ \_____ 9 times ____/	= 0..0FFFFFFFFFFFFFFFFFh
...		

# Block-Tree Structure



## Simple Example (GPS Devices)

Assume we have group of devices with GPS capability which are able to provide various output data formats and also support for GPS 2 (greater precision) latter:

- Cam-coder producing audio and video
- Camera producing high resolution pictures
- Digital dicta-phone producing audio records
- Mobile phone providing positioning for calls, short or instant messages

## Simple Example (GPS Devices)

Assumed steps in currently used formats:

- Special blocks in JPEG EXIF extension
- Special blocks in each AVI, MOV, WMV, RM, MP4, MKV video containers
- Special blocks in WAV, MP3, MKA and various audio containers
- Specific support for various types of mobile phones to support GPS positioning
- Create build-in support for hundreds of applications

## Simple Example (GPS Devices)

With unified data representation you can:

- Define support once and use it in many formats
- Repeat this step for every upgrade (GPS 2)
- Provide support which would be independent on applications
- Allow automatic updates
- Create custom extensions

# Conclusion

Unification should bring following advantages:

- Faster and cheaper development
- More pleasant and rich experience for users
- Better document handling and processing

For more visit: <http://xbup.org>