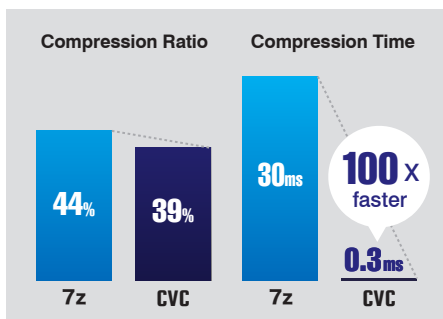# CATANA CORPORATION

CVC for LiDAR

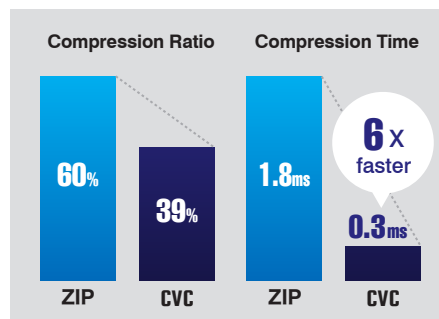Catana Versatile Compression Series

Real-time High-speed Lossless Compression Solution Optimized for LiDAR

LiDAR Compression # Facilitates field testing of autonomous driving

| Testing with LiDAR | | SSD | Computer |

Automotive LiDAR data
Compressed by CVC

128ch LiDAR x2 | 380GB/day → 150GB/day → Testing Data Analysis

Comparison charts

Compression Ratio | **Compression Time**

7z: 44% | CVC: 39%
7z: 30ms | CVC: 0.3ms — **100x faster**

Comparison: 7z vs. CVC software

Compression Ratio | **Compression Time**

ZIP: 60% | CVC: 39%
ZIP: 1.8ms | CVC: 0.3ms — **6x faster**

Comparison: ZIP vs. CVC software

Overwhelming Real-time Performance That Opens Up Potential Uses for LiDAR

Previously, LiDARs may not always deliver their maximum performance affected by long compression time as a bottleneck. With its overwhelmingly fast compression, CVC for LiDAR makes it possible to store large-volume data for prolonged testing. With the continuing advancement and acceleration of autonomous driving development, you can rely on CVC for LiDAR as a powerful data compression solution that provides strong support for your effort.

Supported environment

- Sensor devices: A wide variety of LiDARs and radars.
- OS: Windows, Linux, non-OS system and more
- FPGA: Various types of XILINX and Intel devices
- Data Format: 8-64bit integer type data (distance, reflectance, signal strength, status, etc.)
- CPU: Intel family, ARM family, Renesas family and more

CVC for LiDAR Features

Conventional methods

- ✕ Lower compression ratio and difficult to reduce data volume.
- ✕ Run slow and take too long time to complete.
- ✕ Processing speed highly depends on the type of input data.
- ✕ Not suitable for embedded applications due to larger software size.
- ✕ Freewares may involve ambiguous licenses and difficulty in maintenance.
- ✕ Can be easily decompressed leading to concerns about security.
- ✕ Difficult to implement into hardware.

CVC for LiDAR

- ○ Offers higher compression ratio and more significant reduction in data volume than conventional methods.
- ○ Achieves overwhelmingly faster compression.
- ○ Features stable processing speed and virtually real-time processing.
- ○ Offers lightweight software implementation and can be run in an embedded microcomputer.
- ○ Proprietary data format means higher security.
- ○ Includes a free license for a dedicated library for decompression.
- ○ Can be implemented into hardware as well as supplied as FPGA IP.
- ○ License for large-scale production and extended maintenance are available.

Use Cases / Recommended Uses

Augmented Reality (AR)
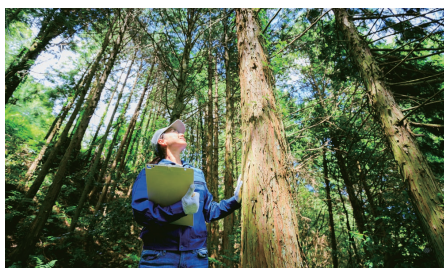Visual contents production such as games and films

Agriculture
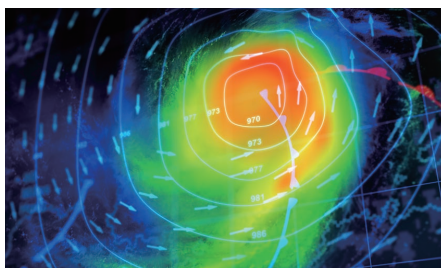Farm management including optimizing fertilizer distribution.

Urban Design & Construction
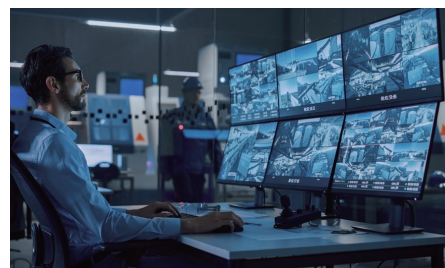Urban Space Modeling by using LiDAR measurements.

Forestry
Topography & vegetation data management in smart forestry

Climate Measurement
Various meteorological information collection by atmospheric LiDARs.

Security & Safety Surveillance
Intrusion detection and monitoring

Introducing CVC Series

CVC Image — Real-time high-speed lossless data compression library optimized for images. Suitable for exhaustive storage of images.

CVC Wave — Real-time high-speed lossless data compression library that enables fast and highly-efficient compression for various type of waveforms.

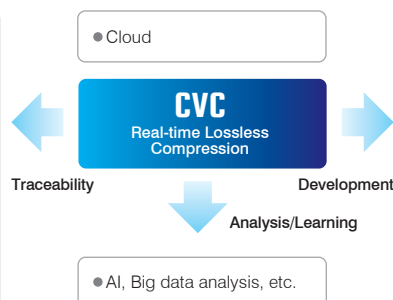**CVC Codec** — IP library that implements CVC compression with FPGA.

CVC Accl — Readily accelerate CVC Image & Wave with a PCIe board enabling overwhelmingly faster compression.

CVC LiDAR — Real-time High-speed Lossless Compression Library Optimized for LiDAR.

- ● Consumer electronics
- ● Automotive
- ● Semiconductors / LCD panels
- ● Sheets / Printed materials
- ● Foods
- ● Pharmaceutical / Medical devices
- ● Agricultural products

and more

- ● Cloud

CVC
Real-time Lossless Compression

Traceability

Development

Analysis/Learning

- ● AI, Big data analysis, etc.

- ● Aerospace (simulation)
- ● Automotive (autonomous driving)
- ● Medical devices (simulation)
- ● Materials development
- ● Data analysis software

and more

Distributor

Catana Corporation Limited

Myria Center 3F 1-2-11 Shinmiyakoda, Kita-ku, Hamamatsu, Shizuoka 431-2103 Japan
Phone: +81-53-428-8611 / FAX: +81-53-428-8612
https://www.catana.co.jp/en/

CATANA CORPORATION

Catana Corporation | Search