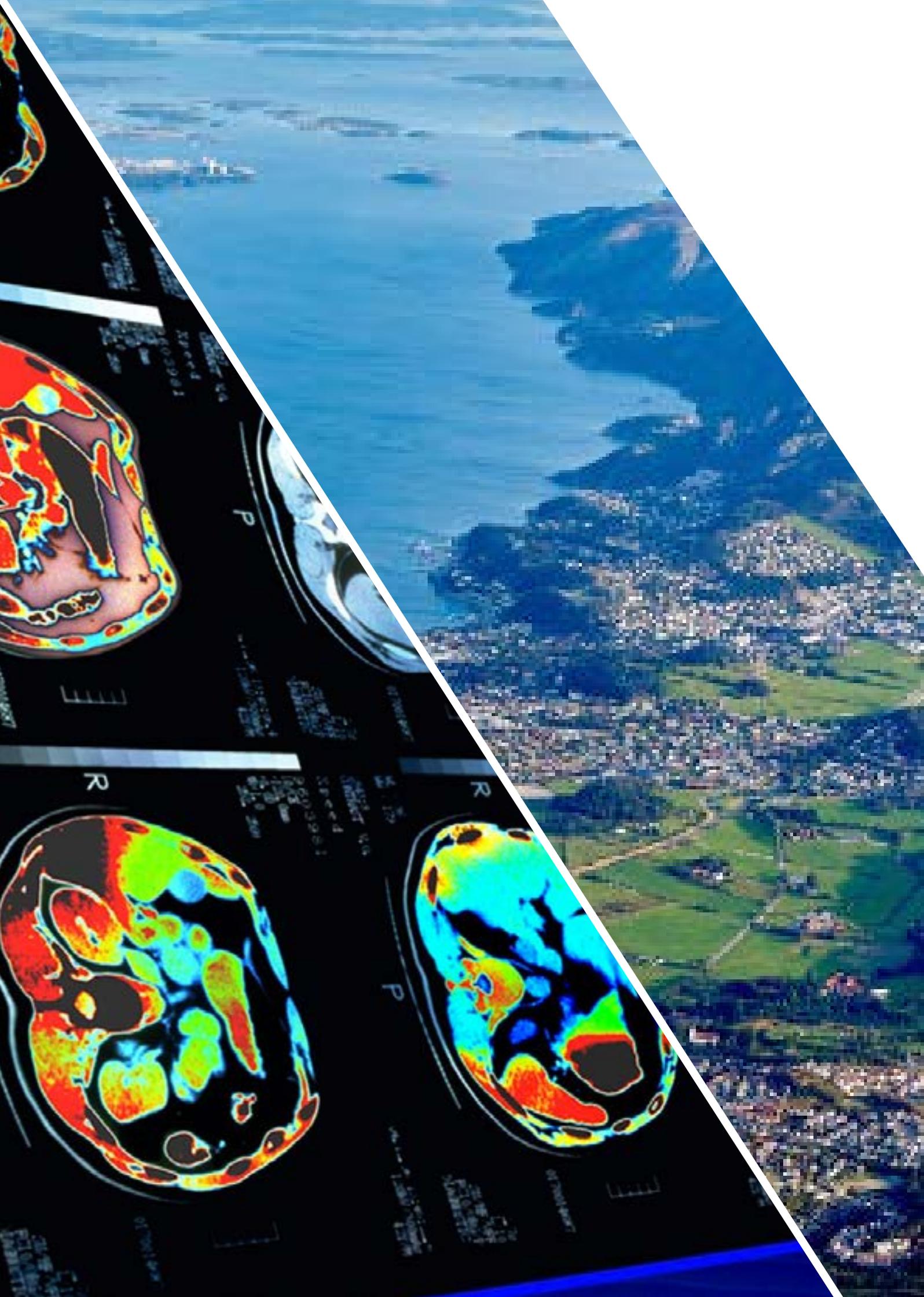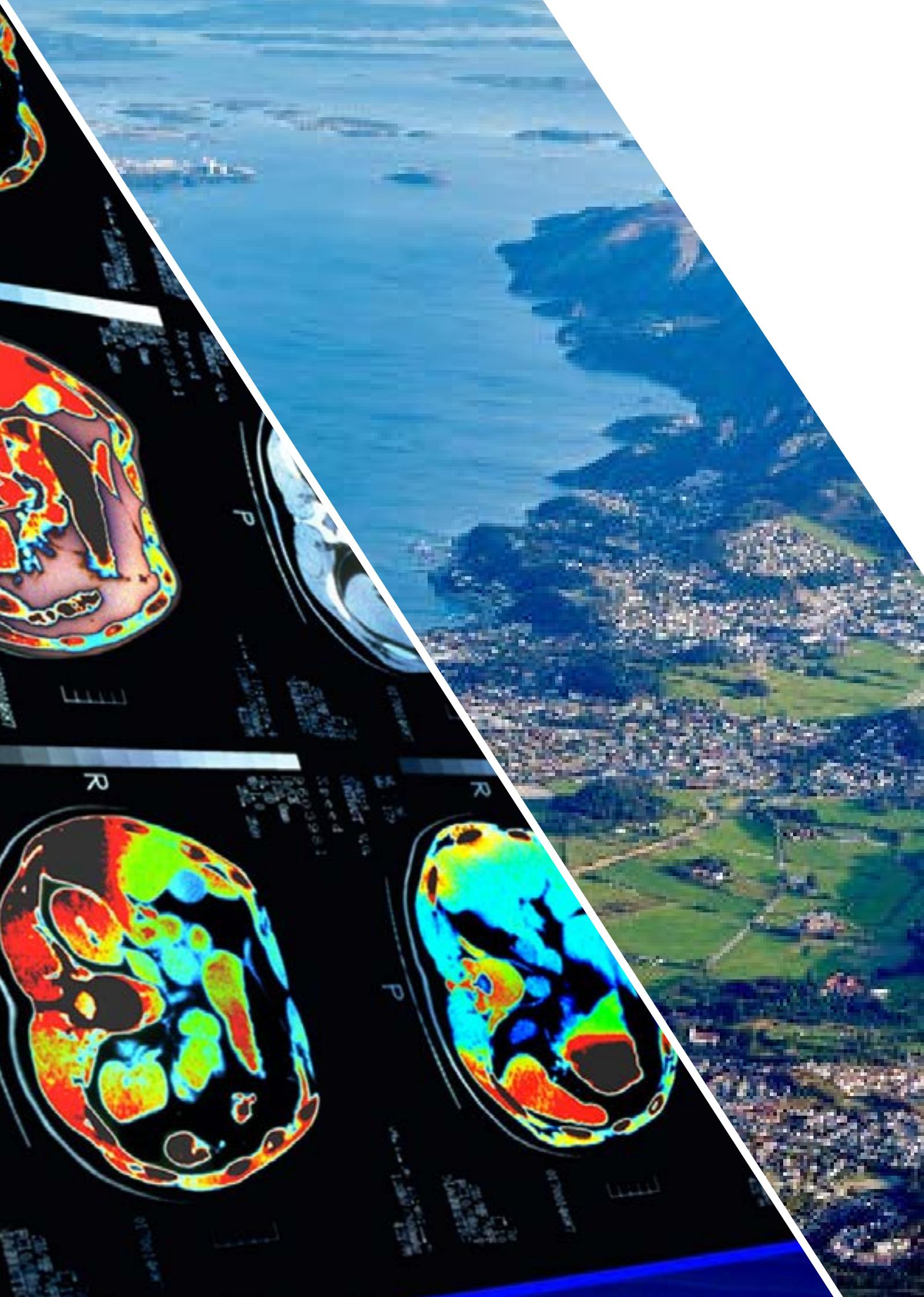# When will your multi-terabyte imagery stop requiring you to buy more data storage?

When you start compressing it to Hexagon's ECW format

Why is ECW (Enhanced Compression Wavelet from Hexagon's Geospatial division) the best format for storing your terabyte or larger image files?

- High-performance compressed file format designed specifically for extremely large imagery stores

- Achieves 15:1 compression ratios (94% reduction)

- Fastest compression and decompression (rendering) rates in the industry

- ECW file format is supported across all major image server and storage platforms

When you compress your imagery into the ECW format, the result is a much smaller file that will be easier to store, send, and display even on smaller devices such as disconnected mobile devices.

If you want to stream ECW images to thousands of users, we have a solution. Streaming imagery via Enhanced Wavelet Compression Protocol (ECWP) is tremendously fast, and even works in low bandwidth networks, which is essential in field service.

ECW's 15:1 Target Ratio Produces Visually Lossless Compression Results

File Size of Compressed vs Uncompressed Data
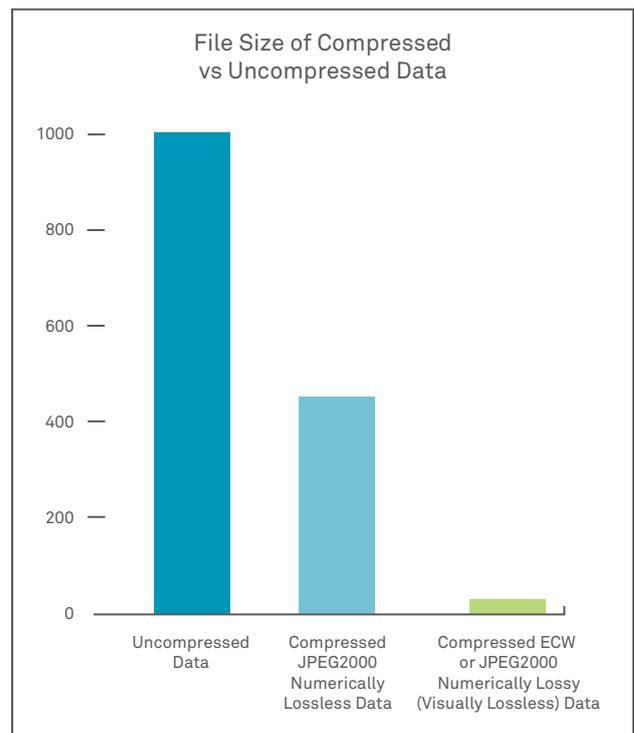
ECW Outperforms all Alternative Storage Formats

Compression performance is generally understood to be determined by these four critical image format characteristics:

- Encoding speed
- Decoding speed
- Retention of the necessary image quality
- File size reduction

Most compression methods prioritize one factor over the others, thereby limiting their overall effectiveness. What makes ECW unique is that it not only provides equivalent or significantly better performance for any individual factor, it does so across all four factors.

Because of this balance, ECW delivers cost savings and performance increases beyond those of all alternative methods. For example, JPEG2000 offers equivalent image quality at equivalent file size, but suffers from slow encoding and substantially slower decoding speed. JPEG compressed TIFF gives equal file size but substantially worse image quality, and so on.

Quite simply, ECW provides more efficient data storage and management, faster delivery and display, and retains visually lossless image quality.

ECW Files vs Conventional Compression Files

One single file fulfills all the performance criteria, highlighting the simplicity of ECW. When an ECW file is created, it is already optimized for display performance and is ready for use, eliminating the significant overhead that other formats suffer in generating, storing, managing and maintaining image tiles, image pyramids and overviews, and tile caches.

ECW   CONVENTIONAL

VS

+1 ECW
Mosaic File

Image
Tiles

Tile
Pyramids

Mosaic
Overviews

Tile
Cache
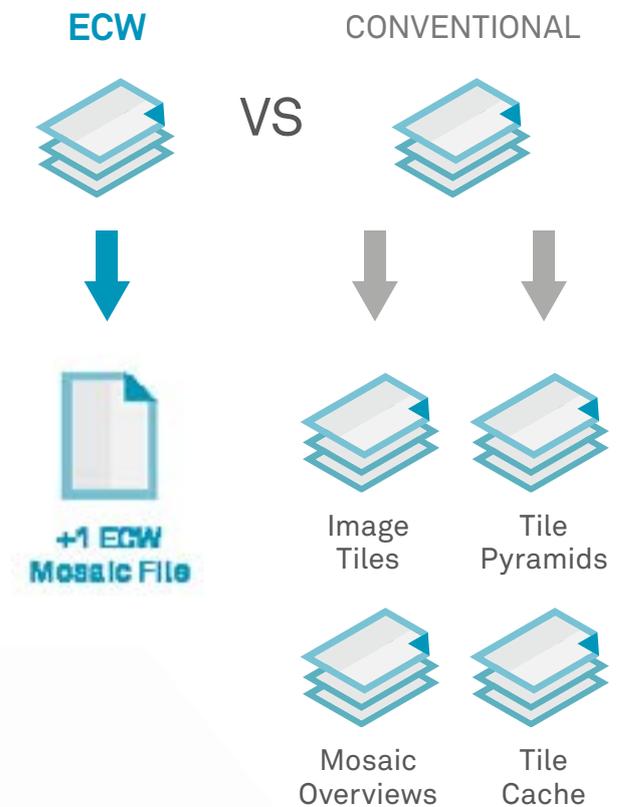
Get ECW Solutions in these Hexagon Products

	Read ECW Files	Create (Compress to) ECW	Read JPEG 2000	Create JPEG 2000	Read ECWP Streams	Stream ECWP Over The Web
GeoCompressor	✓	✓	✓	✓	✓	
M.App Chest	✓	✓	✓	✓	✓	✓
ERDAS® IMAGINE	✓	✓	✓	✓	✓	
ERDAS® ER Mapper	✓	✓	✓	✓		
ERDAS® APOLLO	✓	✓	✓	✓	✓	✓
GeoMedia®	✓		✓	✓		
GeoMedia® Smart Client	✓		✓		✓	
ImageStation		✓		✓		
LuciadLightspeed	✓		✓			
LuciadFusion	✓		✓			

GeoCompressor

Standalone high-performance geospatial image and point-cloud compression application simplifies the creation of ECW, JPEG2000, and Hexagon Point Cloud (HPC) formats.

M.App Chest

Compress, store, and stream data in/from the cloud.

ERDAS IMAGINE

Create an unlimited number of ECW and JPEG2000 compressed images from input images of up to 250 Gigapixels, using either export or direct-write. Leverage ECWP's fast streaming to enable instant delivery into this rich image processing and analysis package.

ERDAS ER Mapper

Powerful image-processing tool for aerial photographs, satellite imagery, and other remotely sensed data.

ERDAS APOLLO

Securely disseminate massive volumes of imagery using ECWP to thousands of users.

GeoMedia

ECW display workflow is exactly the same as that for conventional imagery inside GeoMedia, only it's much quicker and uses less data.

GeoMedia Smart Client

Stream raster backdrops via ECWP to remove client pre-cache processing and cache volume requirements.

Get ECW Solutions in these Hexagon Geospatial Products

	Read ECW Files	Create (Compress to) ECW	Read JPEG 2000	Create JPEG 2000	Read ECWP Streams	Stream ECWP Over The Web
ECW for ArcGIS Server	✓				✓	
ECW Plugin for ArcGIS Desktop	✓		✓		✓	
ECW Plugin for AutoCAD®	✓		✓		✓	

Other third party products that provide ECW solutions are also available

ECW for ArcGIS

Enables ECW imagery to be served through Esri-supported service interfaces.

ECW Plugin for AutoCAD

Greatly improved AutoCAD raster handling with ECW compression.

ECW Plugin for ArcGIS Desktop

Extend the significant format and streaming advantages of ECW and JPEG2000 into the Esri desktop environment. Achieve faster throughput than the native standard ECW support provided by ArcGIS for Desktop.

Incorporate ECW Into Your Own Desktop, Server, or Mobile Application

	Read ECW Files	Create (Compress to) ECW	Read JPEG 2000	Create JPEG 2000	Read ECWP Streams	Stream ECWP Over The Web
ERDAS® ECW/JP2 SDK	✓	✓	✓	✓	✓	

Read and write ECW and JPEG2000 file formats, and read ECWP streams using the robust ERDAS ECW/ JP2 SDK toolkit. This developer toolkit lets you create rapid and efficient file handling in your applications. It includes over 20 examples and is available across many different environments including Windows, Linux, Android, iOS and MacOS. Refer to the user guide for more information.

Image courtesy of Geospace International and the Chief Directorate:
National Geospatial Information

Once Country, One Mosaic

A single aerial image covering South Africa @ 50 cm GSD

3,659,118 x 2,836,274 px

4 Band, RGB

45,816 image files

28,996.53 GB uncompressed

3 Band, RGB

Single image file

439.67 GB ECW compressed

Zoomed-in photo of the compressed image (near Upington, Northern Cape province,
South Africa) Images courtesy of Geospace International and the Chief Directorate:
National Geospatial Information

HEXAGON

Contactus 🌐 **info@geosystems.de**

GEOSYSTEMS
THE GEOSPATIAL EXPERTS

About GEOSYSTEMS

GEOSYSTEMS is a software vendor and service partner for geospatial solutions and helps public authorities, private companies and educational organizations to easily transform location-based data into actionable information. As Hexagon Geospatial platinum partner, GEOSYSTEMS offers not only leading-edge products for remote sensing, photogrammetry, GIS and data management, but also Hexagon Smart M.App solutions for easy-to-use dynamic map experiences. In addition, GEOSYSTEMS develops customized applications, implements tailor-made workflows and provides excellent trainings.

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About Hexagon

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications. Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

Hexagon's Geospatial division creates leading platforms, applications and solutions for visualizing, analyzing, and deriving insight from location data. By interconnecting the geospatial and operational worlds, we help customers of all sizes – from sites to cities to nations – use 5D location intelligence to solve real-world, mission-critical challenges.

From snapshots in time to real-time streams, our technology enables autonomous connected ecosystems that deliver reliable, repeatable location information. We shorten the loop from data acquisition to action, helping clarify what was, what is, what could be, what should be, and ultimately, what will be, so we can build a thriving, sustainable world.

Hexagon (Nasdaq Stockholm: HEXAB) has approximately 20,000 employees in 50 countries and net sales of approximately 4.3bn USD. Learn more at hexagon.com and follow us @HexagonAB.