



Active Image · Blockchain / Digital Media · Founded by German-American creator; global distribution · Ongoing

Active Image: Patented digital media authentication platform built from concept to cross-device product. Invisible pixel-level signatures. Blockchain-verified provenance.

IRIS pixel-level
digital signatures**Fraunhofer**
Fokus co-de

CLIENT CONTEXT

Active Image was founded by Henning Lohner - a celebrated German-American composer, filmmaker, and artist - to solve a fundamental problem in digital media: how to preserve uniqueness in a medium where perfect copying is trivially easy. The company operates both a white-label e-commerce solution and a curated marketplace for exclusive digital media. At its core is IRIS (Integrated Recognition and Identification Signature), a patented steganographic system co-developed with engineers at the Fraunhofer Fokus Institute. IRIS embeds invisible digital signatures into each media file at the pixel level, enabling clear identification, provenance verification, and uniqueness certification. The platform also supports secondary market resale and rental of digital art, generating royalties on secondary transactions and creating a new revenue model for artists and media creators.

THE CHALLENGE

Digital media has no natural scarcity. A high-resolution image file can be duplicated without degradation, distributed without permission, and claimed without attribution. For creators selling digital art, the absence of reliable verification undermines both the commercial model and the collector experience: without a credible way to establish and confirm uniqueness, the concept of a "limited edition digital artwork" is not legally or practically meaningful.

The problem was compounding in urgency. Generative AI tools had made high-fidelity image synthesis trivially accessible, and deepfake manipulation of existing artworks was becoming routine. Collectors and buyers had growing reasons to distrust claims of digital originality - and no independent means to verify them.

Active Image required a technical solution that could do three things simultaneously: embed a unique, tamper-proof identifier into each artwork without visibly altering it; allow that identifier to be detected and verified through a consumer-accessible tool; and do all of this in a way that held up to scrutiny from technically sophisticated collectors, institutions, and marketplace operators.

The secondary challenge was distribution. Authentication technology with no consumer touchpoint is inert. Active Image needed

verified artworks to be displayable and enjoyable across the full range of modern consumer devices - smart TVs, tablets, phones, and display panels - while the embedded authentication traveled with the file.

THE APPROACH

Gradion partnered with Active Image to build the full IRIS platform, working in close collaboration with Fraunhofer Fokus engineers on the core authentication layer.

The technical implementation was structured around four components:

Embedded Digital Identifiers - Each artwork receives a hidden, tamper-proof token encoded directly in the image file at pixel level using advanced pixel steganography. The encoding is permanent and travels with the file through any distribution channel.

Unobtrusive Visual DNA - Subtle alterations are applied to each file that are imperceptible to the human eye under normal viewing conditions but fully traceable through the verification system. Visual fidelity is preserved without compromise; authentication is embedded, not overlaid.

Explorer App for Verification - A companion application captures displayed artworks through a device camera, decodes the embedded signature using proprietary algorithms, and confirms authenticity in real time. The app transforms abstract ownership claims into a concrete, repeatable verification action accessible to any collector.

Unique Encoding for Limited Editions - Each copy within a limited edition series receives its own distinct identifier. Editions are enforced technically: no two copies carry the same signature, and any attempt to represent a copy as an original is detectable through verification.

Beyond authentication, Gradion developed the Digital Canvas feature: cross-device streaming of verified artworks compatible with iOS TV, iPad, Samsung Tizen, Android TVs, and additional platforms. Verified art could now be enjoyed on any screen in a collector's environment while the authentication layer remained intact.

Blockchain integration was layered onto the IRIS system to provide immutable provenance records, supporting resale and rental workflows with royalty tracking on secondary transactions.

RESULTS

Verified authenticity at pixel level - IRIS provides tamper-proof, per-asset identification that survives distribution and copying; Active Image established as a credible authentication infrastructure for digital media

Explorer App converts skepticism into trust - a transparent, consumer-accessible verification tool gives collectors a concrete way to confirm ownership - removing the abstraction that had blocked trust in digital art markets

Limited edition enforcement - each copy in a series has a unique, verifiable identifier; edition integrity is technically enforced, not merely claimed

Expanded accessibility - the Digital Canvas feature enabled authenticated artwork display across iOS TV, iPad, Samsung Tizen, and Android TVs; verified art is now viewable across the full range of consumer display environments

Secondary market enabled - blockchain-backed provenance supports resale and rental with royalty generation on secondary transactions, creating a new revenue model for creators

New industry standard established - IRIS positions Active Image at the forefront of digital content verification at a moment when AI-generated fakes have made provenance infrastructure commercially urgent

"There are truly no words that can describe my gratitude towards the Gradion team and the incredible output they have contributed to our cause. Working with 'my' Gradion team has been and is a joy in my life. Successful execution of ideas is a given; completely reliable, authentic, acute, intelligent, dedicated, and with care for the product and the people involved: I wouldn't know what more to wish for!"

Henning Lohner

Managing Director, Active Image

SERVICES DELIVERED

- Unique Identifier Embedding (pixel-level steganography)
- Unobtrusive Visual DNA (imperceptible per-file encoding)
- Artwork Verification via Explorer App
- Unique Encoding for Limited Editions
- Cross-Device Streaming (Digital Canvas)
- Blockchain Provenance Integration

TECHNOLOGY STACK

- IRIS - patented steganographic authentication system
- Advanced Pixel Steganography (co-developed with Fraunhofer Fokus Institute)
- Blockchain (provenance and ownership records)
- Cross-device streaming: iOS TV, iPad, Samsung Tizen, Android TVs
- Explorer App (iOS/Android - verification via device camera)

Ready to discuss a similar challenge?

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sales@gradion.com