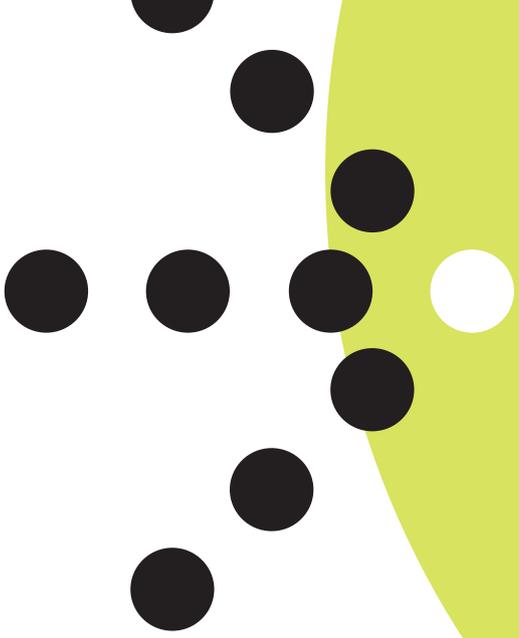**Whitepaper**

Why Software Vendors pay too much for CAD Interoperability

CORETECHNOLOGIE

Predictable Costs Instead of Rising SDK Royalties

The growing number of proprietary CAD formats has made the processing of CAD data for 3D software applications increasingly complex. To manage this challenge, software vendors typically rely on Software Development Kits (SDKs) provided by specialized third-party vendors. However, continuously increasing royalty fees for these CAD SDKs are placing growing pressure on profit margins and making reliable long-term planning more difficult.

In addition, time-consuming contract negotiations, compliance audits, and extensive reporting requirements consume valuable management and operational resources without delivering direct business value. At the same time, integrating and maintaining multiple SDKs means that an increasing share of development capacity is spent maintaining CAD interoperability rather than focusing on new products and innovation.

Meanwhile, market expectations continue to grow. Customers expect seamless multi-CAD compatibility across an expanding number of formats, reliable import and export of complex 3D models, high performance, cloud-ready architectures, and support for emerging applications such as simulation, digital twins, XR, and AI — all based on the same underlying CAD data.

This whitepaper presents, through a real-world customer case study and clear commercial and technical insights, that rising CAD interface costs are not an unavoidable market reality. It outlines a structured, low-risk migration strategy for replacing existing CAD interoperability solutions with the powerful CAD interface SDK 3D_Kernel_IO.

Customer Journey

CGI Company Successfully Redesigns CAD Interoperability
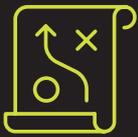
A European CGI provider with more than 20 years of experience develops immersive and highly personalized digital product experiences for global brands. With 100 employees and a scalable technology platform, CAD interoperability is a critical foundation for performance, flexibility, and customization.

For many years, the company relied on an established SDK provider. However, steadily increasing royalty fees under a revenue-based licensing model began to negatively impact profitability and reduce long-term planning stability.

While searching for a more predictable and transparent alternative, the company evaluated **CoreTechnologie** and the **3D_Kernel_IO** solution. The Integration of the API was completed within just a few weeks and included extensive testing along with close collaboration with the technical support team.
At the same time, a clear and predictable licensing structure was agreed upon — without reporting requirements and with a worldwide flat-rate license including an unlimited number of licenses as well as long-term fixed pricing.

After only four weeks, the company decided to fully adopt the new solution. The transition delivered not only complete cost transparency and planning security, but also approximately 30% faster CAD data import performance. The strong partnership and proactive technical support were key factors in the successful implementation. Result: 30% performance improvement

30%

Native CAD Interfaces as a Strategic Success Factor

Today, CAD interoperability is no longer just a technical engineering topic — it has become a strategic factor for product innovation, time-to-market, and the scalability of modern 3D software solutions.

For this reason, the market increasingly expects direct processing of native CAD formats. Direct interfaces — meaning access to the original CAD data without conversion through neutral formats — have become a fundamental standard for high-performance CAx systems. They enable lossless data import and provide access to significantly richer information than neutral formats.

In addition to pure geometry, native CAD data contains design features, product structures, and PMI (Product Manufacturing Information). This information is essential for advanced applications such as automated CAM programming, simulation workflows, and data-driven engineering processes, and is only partially available — or often unavailable — in neutral file formats such as STEP or JT.

At the same time, the independent development and maintenance of native CAD interfaces as in-house solutions is, in practice, hardly manageable. The permanent need to adapt to new CAD versions and proprietary data models entails significant costs and technological risks — even for large software vendors.

Without specialized SDK solutions, CAD interoperability quickly becomes an obstacle to innovation.

Full CAD Format Coverage – Efficient and Cost-Transparent

The **3D_Kernel_IO SDK** solves complex CAD interface challenges under transparent and long-term predictable conditions. With this easily integrable SDK, software vendors can transform their applications into flexible universal platforms for 3D data exchange within a very short development time. All interface formats can be integrated reliably, quickly, and with minimal development effort in a single DLL.

3D_Kernel_IO combines the long-standing expertise of the leading CAD interoperability specialist **CoreTechnologie** in a geometry kernel specifically designed for data conversion — enabling software vendors to focus consistently on the further development of their own products.

3D_Kernel_IO brings together the decades-long expertise of CAD interoperability specialist **CoreTechnologie** within a geometry kernel specifically designed for high-performance data conversion. This allows software vendors to focus on developing their own products rather than maintaining complex CAD interfaces.

Key benefits

▶ **Maximum compatibility**

▶ **Fast integration**

▶ **Best-in-class performance**

▶ **Smart data simplification**

▶ **Flexible architecture**

▶ **Worldwide flat-rate licensing**

Key capabilities include:

42 interfaces for **CATIA V5/V6, NX, SolidWorks, Creo, Inventor, STEP, JT** and many more

A powerful, flexible API designed to adapt to a wide range of application requirements

Optimal data quality with **up to 30% faster processing performance**

Exact envelope geometry for maximum performance in VR and simulation applications

Continuously updated interfaces for reading and writing both native and standard formats

A straightforward licensing model with **no reporting requirements**
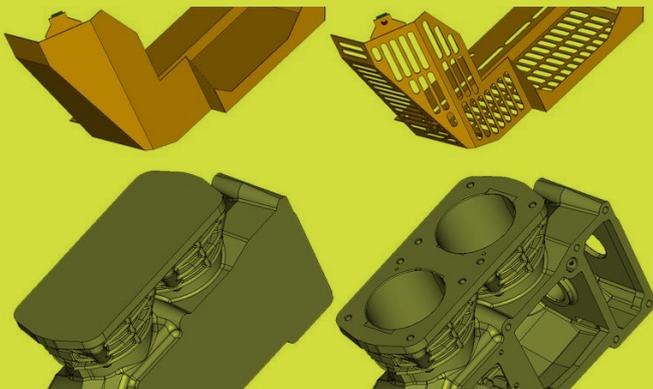
High-End Data Quality

In addition to extremely fast CAD interfaces and significantly reduced import times, powerful triangulation algorithms enable high-end visualization of complex CGI models while maintaining the highest quality standards.

30%
Faster import times

High-end data optimized for VR and immersive applications

"

"We're excited to see how 3D_Kernel_IO enhances our CAD conversion technology within OneCX — enabling access to a wide range of file formats with enterprise-grade precision and reliability."

Mikael Sundell,
*Rapid Images AB*

"

Rapid.

Writing Native CAD Data

As the first CAD interface SDK of its kind, **3D_Kernel_IO** supports not only the reading but also the writing of major native CAD formats including: CATIA V5 and V6, NX, SolidWorks, Solid Edge, Inventor. Importantly, this functionality does **not require any CAD system licenses or proprietary libraries.**

Design Features

Beyond pure 3D geometry, 3D_Kernel_IO also provides access to the complete design history, including feature definitions, product structures, and 3D dimensions and tolerances with full geometric references — all delivered within a unified and clearly structured data model.
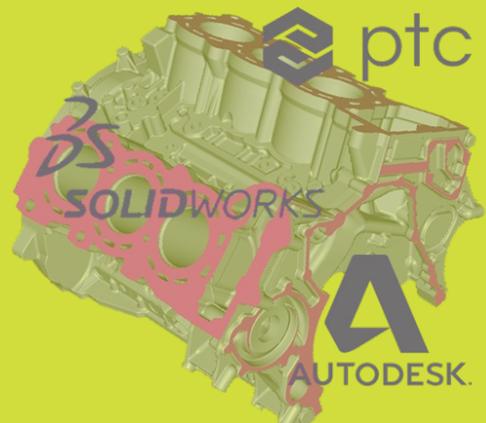
Data Simplification

The unique **Simplifier** technology can reduce data volume by up to **95%** without the typical drawbacks associated with traditional polygon reduction techniques. The original external geometric design remains fully preserved and at the same time the simplified data is delivering high visual tesselation quality.

Flexible and Always Up to Date

3D_Kernel_IO is developed in **C++** and is available across all major operating systems and hardware platforms. The unified query functions within the compact **130 MB DLL** provide access to all common CAD formats on **Windows, macOS, and Linux**, including support for **ARM processors**. This significantly reduces development complexity and helps modernize existing software architectures.

The geometry kernel's unified data structure — designed specifically for CAD data conversion — supports: Points and curves, B-Rep geometry, Design history features, PMI (Product Manufacturing Information), Attributes and metadata, Assembly structures. All information is accessible through generalized query routines, providing a consistent and efficient development framework.

Up to

95%

data reduction
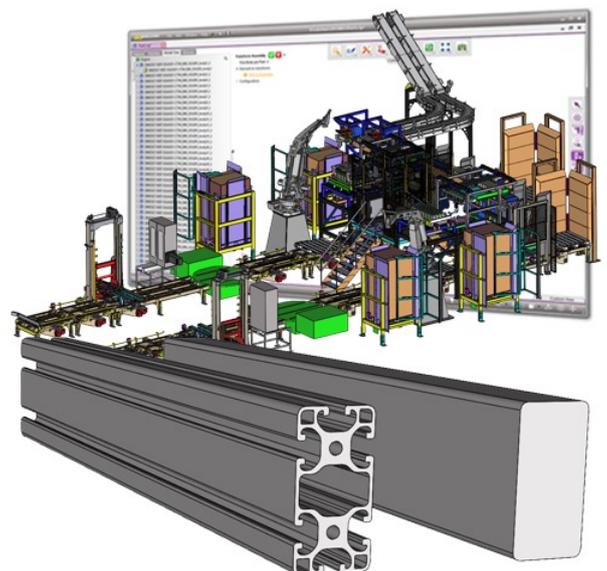
Worldwide Flat-Rate Licensing

Choosing a CAD interoperability solution is a strategic decision with long-term impact on product architecture, time-to-market, and scalability. With **CoreTechnologie**, you gain a partner that is recognized as a leader in CAD interoperability solutions.

To support a well-informed evaluation, we offer a **free trial license along with dedicated expert support**.

This allows you to test **3D_Kernel_IO** within your own development environment and determine whether it meets your technical and strategic requirements.

Get Started Today

With **3D_Kernel_IO**, software vendors can address all CAD interoperability needs through a single provider, a unified API, and a transparent licensing model. Instead of managing complex individual contracts or dealing with revenue-based royalties, companies benefit from a predictable annual license with a fixed cost.

The licensing model includes integrated code protection and can be flexibly adapted as an open library to align with your product strategy. It can also be seamlessly integrated into SaaS and cloud-based solutions.

This approach allows software vendors to maintain full control over the protection, distribution, and monetization of their software — while minimizing administrative overhead and eliminating the need for complex reporting or royalty negotiations.

During the evaluation period, our team provides comprehensive technical support as well as all necessary commercial and contractual information. Our goal is to give you the insights needed to make a confident and well-informed decision. We invite you to explore whether **3D_Kernel_IO** is the right building block for your product strategy.

We look forward to hearing from you.

About CoreTechnologie
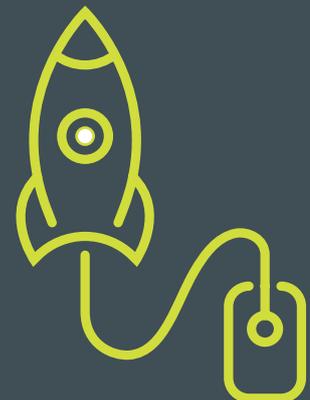
CREATOR
OF **SOFTWARE**
EXCELLENCE

For more than **25 years**, CoreTechnologie has helped leading technology companies manage CAD interoperability across the entire digital value chain — from design and engineering to additive manufacturing.

The company focuses on delivering high-performance, easy-to-integrate CAD technologies designed specifically for developers of advanced 3D software applications.

Today, more than **600 leading organizations worldwide** — including companies in the automotive, aerospace, mechanical engineering, and consumer goods industries, as well as major 3D software vendors — rely on CoreTechnologie solutions.

CoreTechnologie offers a comprehensive portfolio of software solutions ranging from advanced CAD data conversion and analysis platforms to specialized 3D printing applications and a powerful CAD kernel SDK supporting more than **40 read and write formats**. These solutions enable seamless interoperability, more efficient workflows, and scalable digital engineering processes.

www.coretechnologie.com

GERMANY
CoreTechnologie GmbH
Klinger 5
D-63776 Mömbris
Phone: +49 (0)6029 98999-10
info@de.coretechnologie.com

FRANCE
CoreTechnologie Vente
151 Route de Vourles
F-69230 Saint-Genis-Laval
Phone: +33 (0)478 617942
info@fr.coretechnologie.com

JAPAN
CT CoreTechnologie Asia Co., Ltd.
Shinagawa East One Tower 7F
2-16-1 Konan, Minato-ku,
Tokyo 108-0075, JAPAN
Phone: +81 (0)3 6894-2023
info@jp.coretechnologie.com

USA
CoreTechnologie Inc.
20750 Civic Center Drive, Ste 370
Southfield, Michigan 48076
Phone: +1 (248) 996 8464
info@us.coretechnologie.com