Bogotá, Marzo 24 de 2026
DAT-COT-6842-2025

Señores:
FUERZA AEROESPACIAL COLOMBIANA COMANDO FAC
Colombia

REF: Cotización Bentley Itwin Capture y MicroStation, Renovación de licencias de software especializado de modelado 2D y 3D para el desarrollo de contenidos digitales y prestación de servicios de computación en la nube (Cloud Computing), conforme al artículo 476, numerales 20 y 21 del Estatuto Tributario y a las categorías de software definidas por el MinTIC.

Apreciados señores:

Datum Ingeniería SAS., le agradece por seleccionar la tecnología de Bentley Systems y darnos la oportunidad de proveer productos y servicios de calidad. Su participación en el programa de actualización de licenciamiento educativo contribuye a un esfuerzo de investigación y desarrollo que nos permite entregar software de calidad probado por la industria colombiana e internacional.

De acuerdo con su amable solicitud, Datum Ingeniería SAS tiene el gusto de presentar a ustedes oferta económica relacionada a:

1. Software:
    - Bentley ItwinCapture Licencia Perpetua + Suscripción SELECT un (1) año
    - Bentley MicroStation Licencia Perpetua + Suscripción SELECT un (1) año

Cualquier inquietud estaremos atentos a resolverla.
Atentamente,

Ingrid Lozano A

Ingrid Julieth Lozano Acuña
Unidad de SIG y Sensores Remotos
Datum Ingeniería SAS

Bentley®
Advancing Infrastructure

PRODUCT DATA SHEET



iTwin® Capture

Add Real-world Insights to Your Digital Twins with Reality Modeling

iTwin Capture offers the highest fidelity and most versatile means of capturing reality to serve as the digital context for design, and engineering, construction, and operations workflows.

With iTwin Capture, you can go beyond simply creating a digital twin of real-world conditions. The capability enables you to continuously update your digital twin with valuable information extracted from a variety of reality data—including photos, point clouds, and reality meshes—by leveraging automated analysis software.

iTwin Capture brings reality capture to everyone, enabling all infrastructure practitioners to access these capabilities and create, manage, and share reality data, as well as extract insights. This connected reality data environment serves as a single source of truth to advance your infrastructure workflows.

CAPTURE, CREATE, AND ENHANCE REALITY DATA

With iTwin Capture, you can import any reality data to enable various consumption workflows. The application allows you to create engineering-ready reality data—such as reality meshes, classified point clouds, anonymized images, and orthophotos of any size and resolution—using any digital camera, scanner, or mobile mapping device. Use an advanced set of features, such as masks, water constraints, or advanced retouching capabilities to enhance your reality data.

iTwin Capture allows you to reliably and quickly produce reality meshes of any scale at the best quality on the market, from objects measuring a few centimeters to entire cities. The precision of the resulting reality mesh is only limited by the image resolution you use.

Cloud-powered iTwin Capture workflows simplify and scale your projects, allowing anyone on your team to easily document as-is situations affordably and with less investment of time and resources, reducing your costs. Scale your production and deliver projects on time by leveraging parallel cloud-processing capabilities.

You can access your reality mesh using iTwin Capture Mobile or iTwin Capture Console.

- iTwin Capture Console is a desktop application to instantly upload images and point clouds. It allows ground control definition to create accurate reality meshes.
- iTwin Capture Mobile is an augmented reality capture and aided application to keep your digital twin updated by collecting and processing reality data on the fly.

These same capabilities are also available in iTwin Capture Modeler, a desktop processing application.

MANAGE AND SHARE REALITY DATA

iTwin Capture empowers you to federate all your reality data, no matter the size or type, in a connected reality data environment. The application allows you to gain the ability to securely manage, store, grant user access, and share large amounts of reality data to all authorized stakeholders on any device. Working in a connected data environment improves your workflow by sharing and syncing your reality data instantly across project teams and applications, allowing everyone to receive the right information at the right time and make more informed and timely decisions. By organizing, cataloging, and indexing your reality data, you will enable effective searches and accelerate your workflows.

VALIDATE, EXTRACT INSIGHTS, AND DELIVER REALITY DATA

Visually assess the quality of your reality data by using control alignment and dimensions with a dedicated application before handing it over to engineering and operations teams.

By leveraging artificial intelligence and machine learning, you can release the entire value of your reality data and turn it into real-world insights for data-driven decisions. Automated feature extraction and defect detection, combined with efficient asset inventory and feature extraction workflows, can save you hours of tedious work.

Deliver your reality data in engineering-ready formats to be consumed in any CAD or GIS workflow, or by using the iTwin Platform.

WHY ITWIN CAPTURE?

Every digital twin should provide users with immediate access to real-world insights across their workflows. With iTwin Capture, we are committed to making reality modeling an everyday part of your work, just like smartphones, cloud services, and collaborative applications.

iTwin Capture is a comprehensive, cost-effective solution that allows you to continuously update a 4D single source of truth. It empowers reality data capture to provide field-based, insight-driven decisions. With iTwin Capture, you can make data actionable so that stakeholders can receive the right information at the right time and make more informed and timely decisions throughout the lifecycle of projects.

SYSTEM REQUIREMENTS

MINIMUM: 8 GB of RAM, NVIDIA, AMD or Intel GPU, Microsoft Windows 10/11 (64 bit) or Microsoft Windows Server 2012/2016/2019 (64 bit)

RECOMMENDED: 64 GB of RAM, NVIDIA GeForce RTX 2080Ti GPU, Intel 9-4.0GHz CPU, Microsoft Windows 10/11 (64 bit) or Microsoft Windows Server 2012/2016/2019 (64 bit)

BROWSER COMPATIBILITY: Edge, Chrome, and Firefox

iTwin Capture At-A-Glance

REALITY MESH PROCESSING

- Import reality data of any type (image, point cloud, video) in various formats
- Create reality meshes, orthophotos, and point clouds
- Ensure accurate georegistration by handling RTK-GPS or ground control points
- Leverage unique parallel computing to reach unmatched processing speed
- Enjoy advanced level-of-detail technology to ensure smooth navigation on city-scale scenes

REALITY DATA CONVERSION

- Transform point cloud data optimized for web-streaming to support your downstream operations

REALITY DATA MANAGEMENT AND SHARING

- Share images, point clouds, and meshes straight from user interface and invite all project stakeholders to collaborate in single environment
- Manage access rights and levels of permission to secure the project environment
- Import, manage, and align reality data of any type in a simple, streamlined way using a wide range of predefined templates
- Refine reality data quality by removing extra "noise," such as people or vehicles, merging sub-parts, or correcting positional accuracy

INSIGHTS AND FEATURES EXTRACTION

- Leverage machine learning to automatically highlight defects impacting infrastructure to support inspection tasks (cracks, spalling)
- Define ground occupation of your 3D scenes, such as terrain or roofs
- Extract any asset from massive reality data into smart CAD/GIS resources
- Verify quality control extracted features and run advanced quality assessment
- Leverage profiles and cross-sections, bridge clearance, and clash detection to perform and report deep analysis using reality data

VALIDATION AND DELIVERY

- Review reality data (images, point clouds, and meshes) in a web environment for visual checks
- Assess quality of alignment with open mapping layers
- Verify dimensions with coordinates, length, or area measurement capabilities prior to delivery



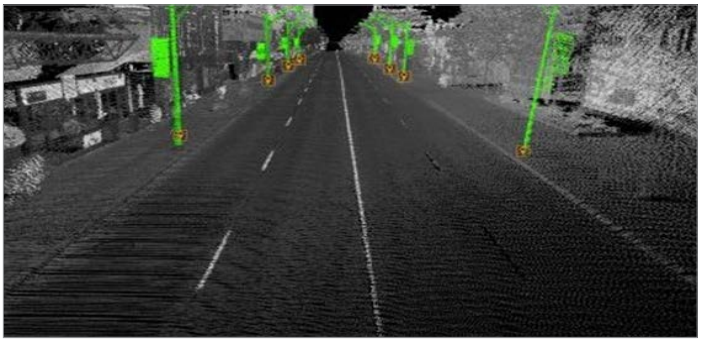
Enjoy advanced level-of-detail technology to ensure smooth navigation on city-scale scenes. Image courtesy of Municipality of Graz.



Leverage machine learning to automatically detect defects impacting infrastructure, such as cracks or spalling, to support inspection tasks. Image courtesy of West Virginia DOT.



Review reality meshes in a web environment for visual checks. Image courtesy of Alabama DOT.

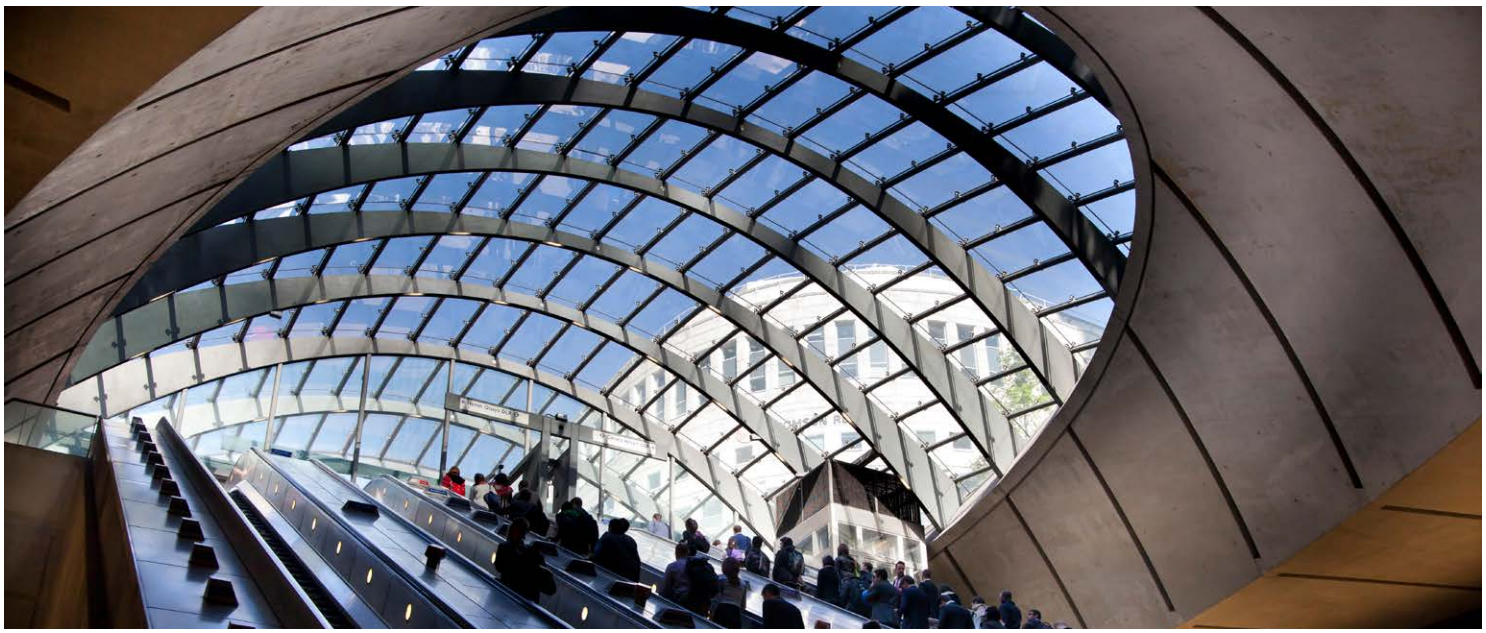


Extract any asset from massive reality data into smart CAD/GIS resources.

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Bentley®

Product data sheet



MicroStation®

Design, model, and manage infrastructure

Engineers and designers use MicroStation to model, document, and manage infrastructure projects better and faster. The application enables you to deliver innovative designs and creative visualizations while consolidating critical project elements into a single environment. MicroStation gives you the power, control, efficiency, and security to reliably deliver the most demanding infrastructure projects from the smallest to the largest. By using the application, you can develop and document improved designs in less time by connecting to drafting and modeling capabilities, contextual geospatial data, and teams.

Integrated modeling and documentation workflows

MicroStation provides a connected environment for comprehensive project delivery with users, projects, and your enterprise. The application enables you to reduce costly on-site changes with digital workflow processes where everything is interconnected. With MicroStation, you can see and use everyone else's data within the confines of your own application. As a result, you can increase productivity, eliminate lag time, and reduce project delays by minimizing survey rework and design delays. A project portal enables your teams to review project details and status, and gain visibility into project performance. Your team can connect with Bentley's iTwin® services, including performance dashboards, issue resolution, and scenario services.

Develop better designs, faster

Develop fully realized designs with unlimited design freedom. MicroStation's powerful modeling capabilities enable you to draft in 2D, model in 3D, develop comprehensive model documentation, analyze and visualize models, accelerate workflows, and secure your data.

Visualize and design with real-world context

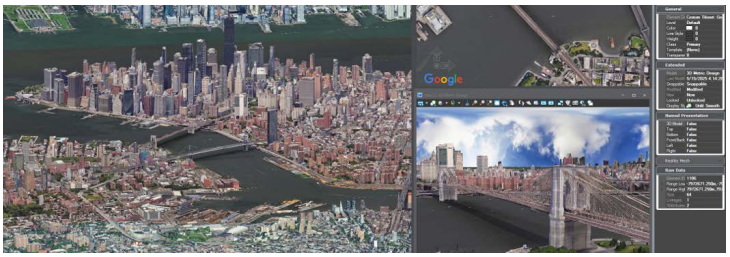
Google Maps and 3D datasets—such as Cesium World Terrain, Cesium OSM Buildings, and Google Photorealistic 3D Tiles—deliver immersive real-world context for project designs, helping reduce risk with accurate data. Streamlined design processes in an integrated geospatial data environment save time and reduce costs by minimizing errors and revisions. Seamless Esri ArcGIS data exchange improves workflows, saving time and effort. MicroStation's Python API automates tasks with geospatial context, enhancing visualization and reducing errors.

Freedom to focus on design

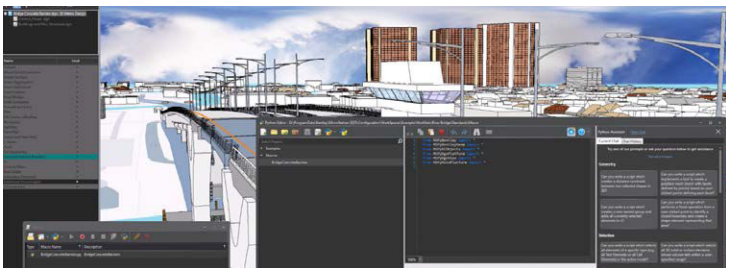
MicroStation's interoperable and scalable capabilities improve the integration of information and teams so you can concentrate on design. Incorporate common design formats and referenced design content. Manage design changes easily. Work in a personalized environment and extend and customize workflows. A Configuration Wizard enables team members to quickly set up consistent project standards, reduce errors, and boost productivity across projects.

More informed teams

MicroStation helps you ensure that all stakeholders are more informed. It provides clearer communication of design intent with intelligent deliverables production capabilities. Use MicroStation to create animations and lifelike renderings, generate intelligent documentation, create digital twins, review designs collaboratively, and maintain and enforce standards.



Visualize designs in the real-world using 3D geospatial context and Google Maps.



Automate repetitive tasks with Python Assistant.

System requirements

Minimum: Windows 11 or 10 (64 bit)/ Windows 11 or 10 (21H2), Windows Server 2019, Windows Server 2016 (64 bit) Intel or AMD Processor 1.0 GHz or greater, 4 GB memory
Recommended: 16 GB memory

MicroStation at-a-glance

Develop better designs, faster

- Develop precise drawings efficiently. Use a comprehensive set of drafting tools to create 2D geometry.
- Develop models in real-world context with 3D modeling tools.
- Build and edit curve, surface, mesh, feature, and solids models.
- Parametric Cell Studio: Build functional, parametric components with predefined variations.
- Component Center 2.0: Manage, publish, find, and reuse components.
- Develop comprehensive model documentation.
- Analyze and visualize models based on geometry or attributes.
- Detect and resolve clashes (Licensed service – charges apply).
- Visualize models by applying real-time display styles. Use an object's height, slope, and other embedded properties.
- Accelerate design tasks and workflows with intelligent interactive snapping.
- Ensure document integrity with digital signatures and access expiration date. Control rights to view, edit, print, and copy files.

Visualize and design with real-world context

- MicroStation is the first CAD software with 3D geospatial context that includes Cesium World Terrain, Cesium OSM Buildings, and Google Photorealistic 3D Tiles (Technology Preview version).
- Integrate geospatial information from thousands of supported coordinate systems.
- Integrate and access live geospatial data from:
  - Google Maps
  - Esri ArcGIS™ REST Feature Services
  - Esri ArcGIS REST Map and Image Services
  - OGC Web Map Services (WMS and WMTS)
  - OGC Web Feature Services (WFS)
  - Real-time GPS data
- Access static geospatial data from:
  - Esri file geodatabase and Esri shapefile (import and export)
  - Geospatial PDFs (3D geometric representations of models)
- Create and reference geospatial PDFs.
- High performance for large-scale geospatial datasets.
- View and manipulate point cloud data in 17 popular formats without translation.
- Incorporate raster imagery of all types. Use aerial and satellite imagery, as well as scanned documents.
- Integrate engineering-ready phototextured reality meshes created from photos.
- Produce realistic video and simulations from design, construction, and operational models with VUE rendering engine.
- Render in near real-time with photorealistic rendering.
- Incorporate libraries of physically correct materials, lighting, and rich photorealistic content (RPC).
- Use point-and-shoot to physically correct materials and lighting libraries.
- Use Search Location tool to enable search by address to simplify geolocation tasks.
- Python API supports geospatial context, with 20 automation samples for geospatial context through Python script.

Freedom to focus on design

- Read, share, consume data in key formats, including: Autodesk RealDWG™ (share and consume), IFC (read and export), Esri SHP (import and export), and Esri GDB (import and export).
- Aggregate and assemble multiple file formats, including: DGN, DWG, PDF, U3D, 3DS, ACIS SAT, CGM, Collada, DXF, IFC, IGES, OBJ, Parasolid, Rhino 3DM, SketchUp SKP, STEP AP203/ AP214, STL, and VRMLWorld.
- View and work with design information from others in real -time.
- Live referencing of 2D/3D DGN, DWG, and large image files.
- Natively reference PDF files into designs.
- Attach versioned files including design history.
- Navigate through file history.
- Many file formats supported, including: CALS, BMP, TIF, GeoTIFF, and JPG.
- Record all design changes for rich revision control.
- Compare and plot design file changes.
- Group tools and tasks and customize interface.
- Employ universal database connection.
- Create user-defined macros.
- Create customizable cursor menus.
- Personalized in-application learning and feature recommendations.
- Integrate with enterprise systems using a wide range of available applications to customize the user interface.
- Develop solutions using Microsoft (VBA), .NET, C++, C#, and Python, as well as user-defined macros.
- Automate and accelerate tasks with Python.
- AI Python Assistant (Technology Preview version). Use Python more easily for automation and tool creation.
- Use Configurations Wizard to simplify setup with guided workflows and best-practice templates for consistent standards.

More informed teams

- Generate and place accurate tables and reports derived from business intelligent elements.
- Update all annotation dynamically.
- Manage drawing views across an entire project.
- Drag and drop plans, elevations, and sections to create documentation.
- Slice and filter 3D models to improve interactive visualization.
- Update drawings automatically when 3D models change.
- Coordinate 3D models and 2D drawings automatically.
- Synchronize existing designs with iModel® to create a digital twin.
- View latest revisions and changes to the project.
- Issue Resolution Service to review, track,and resolve issues across the entire project team (licensed service).
- Create rich, multidiscipline models for design review.
- Consume and coordinate electronic design reviews.
- Manage CAD standards with configurable checking capabilities. Easily manage all styles for dimensions, text, lines, detail symbols, and display.

Bentley

Find out more at **Bentley.com**
1.800.BENTLEY (1.800.236.8539)
Outside the U.S.: +1.610.458.5000
Global office listings: bentley.com/contact

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Oferta de Venta No. 6482

NIT : 830136779-4

Señor(es)	**FUERZA AEROESPACIAL COLOMBIANA COMANDO FAC**	Fecha	24/03/2026
NIT	899999102-2	Proyecto :	05046
Dirección		Asesor Comercial	Ingrid Julieth Lozano Acuña

Estimados Señores:

De acuerdo con su amable solicitud, tenemos el gusto de presentar nuestra oferta económica relacionada con la adquisición de los siguientes elementos:

Descripción	Cantidad	Precio Unitario	Precio Total
RENOVACIÓN DE CINCO (5) LICENCIAS BENTLEY MICROSTATION POR 1 (UN) AÑO	5	7.862.500	39.312.500
RENOVACIÓN LICENCIA BENTLEY ITWIN CAPTURE MODELER POR 1 (UN) AÑO	1	10.412.500	10.412.500

Comentarios: Renovación de licencias de software especializado de modelado 2D y 3D para el desarrollo de contenidos digitales y prestación de servicios de computación en la nube (Cloud Computing), conforme al artículo 476, numerales 20 y 21 del Estatuto Tributario y

Subtotal	$ 49.725.000
	0
Total	$ 49.725.000

Condiciones Comerciales de nuestra oferta:

Validez de la oferta: Esta oferta es valida hasta el día 30/09/2026

Condiciones de pago: 30 DIAS

Asesor Comercial: *Ingrid Lozano A*

Ingrid Julieth Lozano Acuña

Cl 46 No. 67 04 Bogotá Colombia Teléfono 57 (1)7431989 ia Fernanda Perez Caceres
WEBSITE www.datuming.com Correo electrónico info@datuming.com

CONDICIONES COMERCIALES

FORMA DE PAGO

Se sugiere la siguiente forma de pago:

- 100% Contado Comercial. La factura se pagará dentro de los siguientes treinta (30) días contados a partir de su radicación.

Datum Ingeniería SAS., informa que no es Auto-retenedor, NI Gran Contribuyente.

TRM: En caso de que la cotización sea en dólares, se efectuará la TRM del día del pago de la factura.

TIEMPO DE ENTREGA

El tiempo de entrega será de veinte (20) días, contados a partir de la fecha de recibo de la orden de compra.

Nota Aclaratoria: Una vez aceptada y legalizada la orden de compra del producto o servicio por parte del cliente; Datum Ingeniería NO hará:

- Reintegro de anticipos pactados en la oferta
- Modificaciones del producto y/o servicio adquirido

Datum Ingeniería NO aceptará:

- Devoluciones de producto
- Una vez recibida la orden de compra por parte del cliente, no se aceptarán cancelaciones ni devoluciones de la misma.
- Una vez recibida la aprobación de la cotización no se aceptarán cancelaciones ni anulaciones de la misma.

TIPO DE ENTREGA

Los elementos (CD´s y documentación) pertenecientes al servicio cotizado se entregarán durante el período de cubrimiento del contrato y de acuerdo con la liberación de actualizaciones por parte del proveedor.

BENEFICIO

1. Se brindará el servicio de soporte y actualización de las licencias del software objeto del contrato.

2. Se suministrará e instalará las últimas versiones del software liberadas durante la ejecución del contrato.

3. Se entregará la documentación propia del software actualizado.

4. Se hará entrega de los medios magnéticos de las actualizaciones del software, durante la duración del contrato.

5. El servicio de soporte técnico se brindará mediante consulta telefónica al +57 (1) 743 1989 Ext.: 4026, +57 300 745 8845 ó correo electrónico federico.sarmiento@datuming.com, dentro del horario hábil de lunes a viernes de 8:00 a.m. a 5:30 p.m. durante la ejecución del contrato.

6. Se brindará soporte técnico en las instalaciones de la entidad para la resolución de los problemas presentados, cuando éstos no hayan sido resueltos telefónicamente en un tiempo de respuesta no superior a dieciséis (16) horas hábiles contadas a partir del momento en que sea comunicada la anomalía.

7. Se informará trimestralmente mediante un boletín sobre las nuevas versiones que desarrolle Bentley Geosystem, con sus correspondientes requerimientos.

EL CONTRATO DE MANTENIMIENTO NO INCLUYE:

- La oferta de Mantenimiento y Soporte Técnico, No incluye capacitación. Estos servicios tienen costo adicional.

- La oferta de Mantenimiento y Soporte Técnico No incluye el desarrollo de aplicaciones o proyectos.

- No está cubierto por la oferta Mantenimiento y Soporte Técnico, la recuperación de información almacenada en el equipo, incluyendo los datos, programas de aplicación al sistema, procedimientos, etc., que puedan eventualmente dañarse en el momento de la instalación o por una falla del software y/o daño del equipo. En consecuencia, el usuario deberá mantener las copias de respaldo necesarias para garantizar su recuperación.

NOTA: La oferta No incluye la capacitación de las licencias adquiridas.

RESPONSABILIDAD ECONÓMICA CONTRACTUAL:

La responsabilidad económica y/o contractual de Datum Ingeniería SAS al respecto de cualquier aspecto relacionado con la venta y/o suministro de los productos y/o servicios vendidos como resultado de la negociación de la presente propuesta comercial, únicamente ira hasta el valor comercial de esta venta y por ninguna razón cubrirá costos y/o perjuicios relacionados con actividades, proyectos, servicios, usos o similares para los cuales el cliente emplee el producto y/o servicio adquirido. Esta cláusula se entiende aceptada al momento en que el cliente emite la orden de compra correspondiente.

ACUERDOS DE PAGO, SERVICIO TÉCNICO Y GARANTÍA:

Todos los servicios de Soporte técnico y Garantía brindados por Datum Ingeniería SAS estarán sujetos al cumplimiento de la forma de pago pactada con el cliente, entendiendo que el cumplimiento en los acuerdos de pago da el derecho al cliente de la solicitud de los servicios antes mencionados. Por lo anterior será discreción de Datum Ingeniería SAS la prestación de los servicios de Soporte Técnico y Garantía en caso de que el cliente no se encuentre al día con los pagos a Datum Ingeniería SAS.

VALIDEZ DE LA PROPUESTA

La presente oferta tiene una validez de Treinta (30) días calendarios contados a partir de su presentación.