



RISK MANAGEMENT

Achieve operational excellence

Being able to meet complex and continually changing regulatory requirements with smart automation processes is critical.

Controls and Data Services **VISIUMKMS™** provides the process and insight needed to help companies manage risk effectively.

Using experience gained through delivering enterprise environmental, health & safety (EH&S) information management systems to leading global Fortune 500 customers, **VISIUMKMS™** reduces the time required to manage change, track corrective and preventive actions, conduct process hazard analyses (PHAs), audit facilities and manage incident investigations.

VISIUMKMS™ aids efforts necessary to comply with the U.S. Occupational Safety and Health Administration's (OSHA's) Process Safety Management (PSM) Standard and the Risk Management Program (RMP) Rule. It also helps companies address the requirements of API RP-75, OSHAS-18000, ISO 9000 and ISO 14000.

VISIUMKMS™ Technology

A development of a mature, proven solution that has been in use for more than 15 years, **VISIUMKMS™** has been designed and developed by process safety management experts. Our solution is created for clients of any size, ranging from single sites to multiple, geographically-dispersed facilities that generate 3,000 or more Management of Change (MOC) processes per year. The fully-integrated, web-based **VISIUMKMS™** Suite, provides the information and visibility needed to remain competitive and compliant.

Achieve operational excellence by managing risk in the most optimised and efficient way, choose Controls and Data Services (CDS) **VISIUMKMS™**

VISIUMKMS™ (Process Safety Management Solution) is made up of a series of task modules.

These comprise of:

- Resolution Tracker
- Investigator
- Auditor
- PHA Workshop
- BadgerMail™
- Risk intelligence

Combined they provide the tools to deliver risk management optimisation.



Benefits

VISIUMKMS™ benefits customers with lower operating costs, assured compliance with government regulations, avoidance of fines and sanctions, and demonstration of good corporate citizenship. Overall business benefits are achieved through:

- Understanding key safety performance indicators and metrics
- Central assessment and control of issues and risks
- Sharing and acting on lessons learned
- Ensuring close-out of audits, inspections, work assignments and improvement actions



VISIUMKMS™ Modules

Resolution Tracker

Resolution Tracker has the exceptional ability to track all recommendations, regardless of source or purpose, from inception to closure. Unlike other solutions, Resolution Tracker allows you to manage in one module the entire universe of corrective action, both “in-kind” and “not-in-kind” change. Ad hoc recommendations that do not fit your management of change (MOC) definition can be managed from collection to execution using your current work process. Ideas and recommendations can come from a variety of sources such as meeting minutes, improvement ideas, PHAs, corporate audits, incident investigations and safety suggestions.

With Resolution Tracker, you are able to monitor all of them through to completion; they will no longer “fall through the cracks.”

Investigator

Investigator is a management tool designed for recording, analysing, and sharing lessons learned from near-misses, actual incidents, or other unwanted events. Defined in terms of asset unavailability (reliability), safety, environment, quality, or security, these or any other events from which you want to document lessons learned can be leveraged for better future performance. Investigator has many user-defined “picklists” and screens that can be used to log all incident data, including tracking safe and unsafe acts, safety tenets or other EH&S checklist items. Corrective actions from Investigator are seamlessly transferred to Resolution Tracker where they can be tracked to closure as Recommendations or MOCs.

PHA Workshop

Used by consultants and in-house experts since the late 1980s, PHA Workshop has provided risk assessment on thousands of processes worldwide. This tool facilitates recording PHAs, including hazard and operability analyses (HAZOPs), checklists and what-ifs. Corrective actions from PHA Workshop are seamlessly transferred to Resolution Tracker where they can be tracked to closure as Recommendations or MOCs.

Auditor

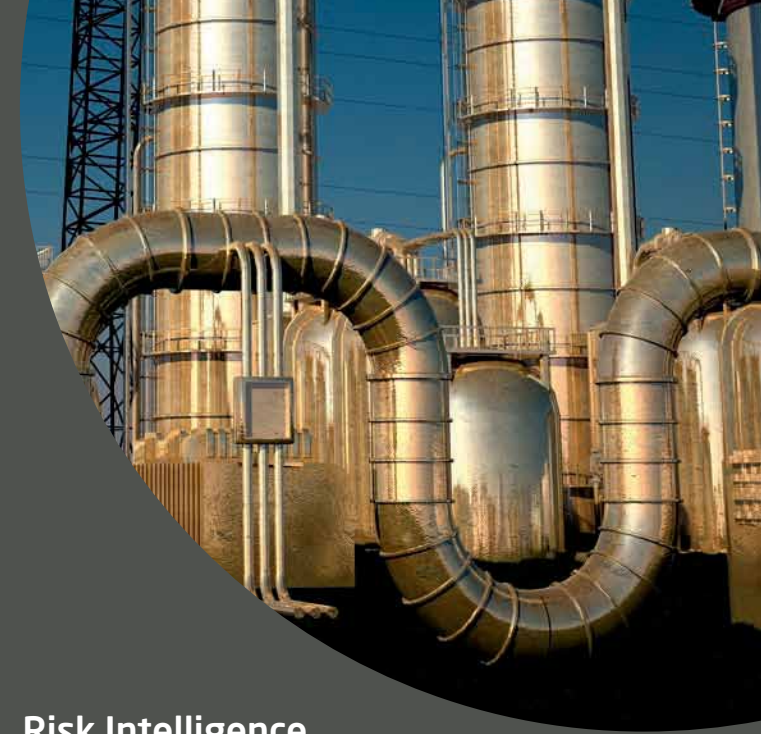
Auditor is an enterprise grade solution for planning, conducting, and documenting any type of audit, review, inspection, or surveillance program under any protocol. Corrective actions from Auditor are seamlessly transferred to Resolution Tracker where they can be tracked to closure as Recommendations or MOCs.

BadgerMail™

BadgerMail™ is a fully configurable notification system that allows VISIUMKMS™ users to receive assignments and reminders of open action items via email. Escalation rules can be set up so that overdue items are notified to an appropriate supervisor.

BadgerMail™ can be customised with rules appropriate to each organisation business unit and specific to the type of action or approval needed. Each BadgerMail™ type can be set to run on its own schedule, ensuring that the frequency of notification is appropriate to the task.

Active links in the BadgerMail™ make it quick and simple to access the items to close them out in VISIUMKMS™



Risk Intelligence

A new Risk Intelligence dashboard capability is now part of the VISIUMKMS™ solution. Users can select from pre-configured key performance indicators, reports and charts to create their own dashboard configuration, and use the provided filters to quickly focus in on their area of interest.

KMS Services

CDS provides a range of services and support for VISIUMKMS™ to guarantee successful deployment and ensure return on your investment:

- Comprehensive implementation and training services
- Application hosting or “Software as a Service”
- 24 x 7 phone or internet access to Support Desk
- User community website
- User groups and conferences

“Helping companies to manage risk effectively.”

visium KMS™ – RESOLUTION TRACKER

Operational Risk Management Solution

Automated Management of Change

Resolution Tracker is the core application in the **VISIUMKMS™** suite. It automates process safety compliance by streamlining approvals and tracking to closure Management of Change (MOC) and Pre-Startup Safety Review (PSSR) actions. As well as supporting US code 29 CFR 1910.99 and similar process safety management rules, it also ensures business improvement actions are closed out in a timely fashion.

Audits, hazard analyses, incident investigations and continuous improvement activities are facilitated through seamless integration with other **VISIUMKMS™** modules. Notification of action assignment, follow-up and escalation, is automated through **VISIUMKMS™** BadgerMail™.

Resolution Tracker Modules

Management of Change (MOC):

Automates not-in-kind changes of the MOC process, reducing the paper trail, simplifying tracking and communicating status to closure. Configurable design allows sites or businesses to match their existing processes.

Pre-Startup Safety Review (PSSR):

Stores the checklists used in the MOC process to ensure that all project associated design items have been completed.

Recommended Actions:

Manages all enterprise corrective actions, recommendations, ideas, innovations and action items that do not require the full management of change process.

Recurring Activities:

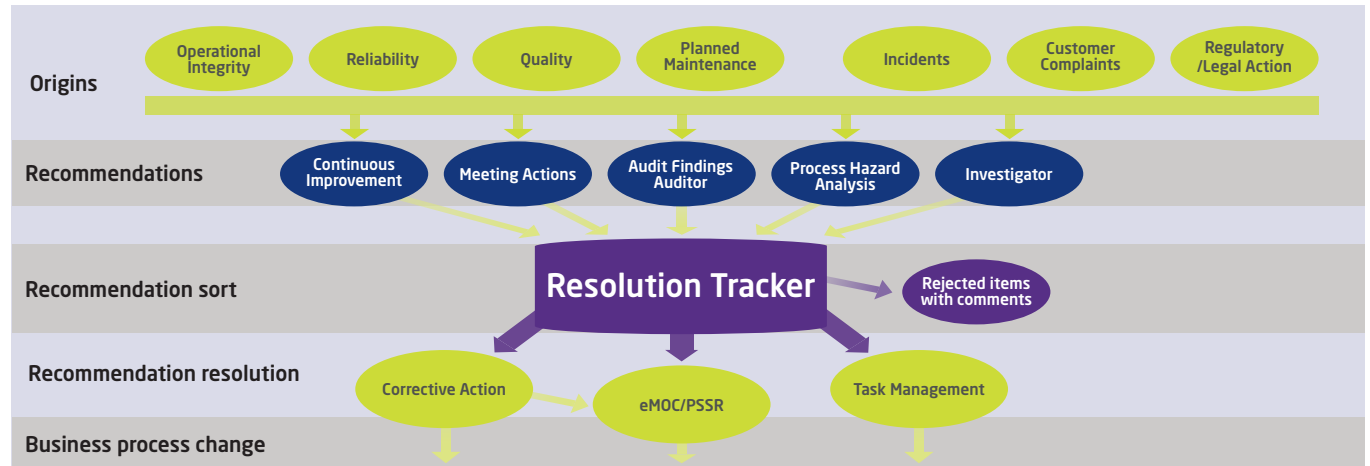
Allows management of planned tasks such as permitting, process-hazard analysis (PHA) re-validations, inspections, audits and meetings.

Benefits

VISIUMKMS™ - Resolution Tracker delivers control of compliance processes. It is unique in allowing individual business units to create and maintain their own MOC and PSSR workflows.

This provides:

- Increased efficiency in dealing with EH&S issues through standardised business processes aligned with your business model
- Process improvement through performance measurement
- Better management visibility of accomplishments and needs
- Faster response to changes in regulations and business processes
- Improved lessons-learned sharing among departments and facilities
- Seamless integration with other **VISIUMKMS™** modules to increase functionality
- Designed-in process-safety business rules to facilitate rapid deployment and return on investment



visium KMS™ – INVESTIGATOR

Operational Risk Management Solution

Proactive event resolution

Risk management is a daily challenge for oil and gas, refining and chemical processing companies. When business interruptions, near misses, safety, quality or environmental incidents happen, successful companies are quick to analyse and learn from the event. Prevention of similar mishaps requires sharing lessons learned across operations on a timely basis. Being able to stimulate continuous improvement relies on knowledge gained through experience. Failure to learn from incidents can result in costly repeat occurrences – as well as increased scrutiny from stakeholders and regulators.

Automated learning promotes continuous improvement

VISIUMKMS™ – Investigator provides the tools you need to make organisational learning and continuous improvement a reality. Investigator enables facility or enterprise-wide sharing of the “single source of truth” from the analysis of any type of incident or near miss. Being part of the VISIUMKMS™ suite means that corrective and preventative actions to address incident causes are properly tracked to closure – ensuring that improvement happens and value is realised.

Fully customisable to any operation

Investigator captures information from any type of costly event:

EH&S/Process Safety Management: Near miss, injury, fire, explosion, vapor release, spills and agency inquiry; vehicular/ transportation violations; deviation from permits.

Business: Unscheduled unit/plant shutdown; lost opportunity; production loss or rate reduction; expense budget impact; product quality deviation; contractual obligations or reputation damage.

Community: Injury to public; complaints escalation; off-site impact; off-site property damage.

Mechanical integrity: Unavailability of critical process equipment, safeguarding protection systems or emergency response equipment, exceeding safe operating limits.

Security: Work-place violence; internal/external threats or sabotage; unauthorised entry; suspicious activity; theft; loss or damage to property; negative information technology issues; inquiries by law enforcement agencies; compliance visit management.

Investigator, part of the VISIUMKMS™ (Knowledge Management System) suite, gives you unparalleled insight into your incident management information and ensures that corrective actions are implemented, delivering real improvement.

VISIUMKMS™ – Investigator Benefits:

- Immediate BadgerMail™ notification of an incident or near miss
- Reduced potential for repeated costly incidents via timely, distributed lessons learned
- “Single source of truth” for process safety, risk management, quality assurance, plant security, process reliability, asset and operational integrity issues
- Easily configurable, rapidly deployed to align to incident management processes
- Supports identification and enforcement of best practice across the enterprise
- Integrates with other VISIUMKMS™ modules



visium KMS™ – Occupational Injury & Illness (OI&I™)

Operational Risk Management Solution

Controls and Data Services (CDS) has developed an integrated suite of web based software tools for effective Environmental, Health & Safety (EH&S) information management known as **VISIUMKMS™**. This was designed to help the process industries efficiently manage EH&S data, and to comply with the Occupational Safety & Health Administration (OSHA)'s Process Safety Management (PSM) standard as well as the U.S. Environmental Protection Agency (EPA)'s Risk Management Program (RMP) rule.

CDS' Occupational Injury & Illness (OI&I™) application tracks OSHA-required case data and supplemental costing information typically requested internally by management. OI&I™ allows companies to generate OSHA 300, 300A and 301 logs at the click of a button.

Occupational Injury and Illness (OI&I™) Features

- Print supplemental reports based on user defined criteria
- User-definable security options
- Flexible software access can be tailored for each user of OI&I™, allowing many levels of system security
- OI&I™ is integrated with **VISIUMKMS™** Investigator™ and Resolution Tracker™ modules
- Build pick lists as you work
- Copy a user-defined set of fields from one case to another with the case copy wizard
- Browse the application with user-friendly sort and search options
- Print or store data electronically, ensuring accessibility "on demand"
- View web-based key performance indicators and graphics via your company Intranet and the **VISIUMKMS™** digital dashboard
- Associate equipment and equipment types to the OI&I™ case

OI&I™ provides time-saving, streamlined help for any size organisation by providing a single data entry point for injury and illness data, financial data, and employee information. A centralised database allows companies to produce OSHA logs on demand and generate ad-hoc reports with user-defined search criteria and drill-down graphics.

Standard reports include:

- Total cases by year
- Recordable incident rate and incident severity index
- Injury/illness by facility, area, or unit
- OSHA 300A, 301 and 301A Logs

Injury severity index and recordable injury rate key performance indicators (KPIs) can be tracked and trended with OI&I™ allowing management to easily identify common safety issues. The OI&I™ trending tools aid management in performing root cause analyses and developing corrective action plans to reduce accidents, injuries, and near-misses.



visiumKMS™ – PHA WORKSHOP

Operational Risk Management Solution

Is your Process Hazard Analysis (PHA) up-to-date? OSHA (Occupational Health and Safety Administration) puts failure to comply with PHA elements of its process safety management standard amongst the top three causes for citation in refinery National Emphasis Program audits.

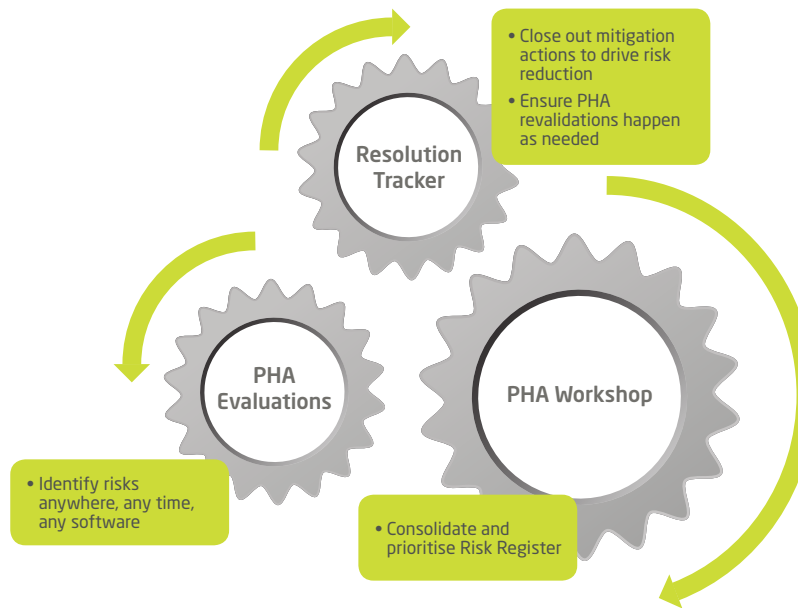
VISIUMKMS™ - PHA Workshop provides a single, secure repository for enterprise-wide process hazard analysis (PHA) and risk assessment data. It simplifies the task of maintaining up-to-date records, and creates a corporate risk registry that identifies, prioritises and automatically aggregates risks.

PHA Workshop allows you to records results of:

- Hazard and operability reviews
- “What if?” questions
- Job safety analyses
- Risk Register
- Checklists such as security vulnerability analyses (SVA)

Full integration with **VISIUMKMS™** - Resolution Tracker enables you to:

- Track and close out actions to mitigate identified risks.
- Maintain and update PHAs as changes (MOCs) managed in Resolution Tracker are introduced to your facility
- Set up Recurring Activities to ensure PHA revalidations are completed on time.



PHA Workshop consolidates your risk register in a central, secure location. Integration with Resolution Tracker drives risk reduction and ensures PHAs are kept up to date.

Benefits

- Enables effective collection, documentation and management of hazard and operability data
- Delivers a single, enterprise-wide source of information for your hazard knowledge management
- Facilitates compliant operations by capturing causes, consequences, safeguards and recommendations
- Enables sharing of results, best practices and lessons learned across the enterprise

Features

- Fully configurable library of common phrases for causes, consequences and safeguards
- Automatic loading of process checklists such as equipment-wise, human factors, facility siting, operating procedures, SVA checklists
- Import PHA results from a range of common tools and systems

visium KMS™ – AUDITOR

Operational Risk Management Solution

To maintain certifications and comply with international standards, you must be able to demonstrate compliance with required audit, review, inspection or observation programs. To achieve continuous improvement, you need actionable information derived from comparing the theoretical to reality in the field.

VISIUMKMS™ – Auditor is widely used in the chemical process, oil and gas, and refining industries as well as high-tech manufacturing. Seamlessly integrated with **VISIUMKMS™** – Resolution Tracker, it provides an enterprise-grade solution that allows your audit team to:

- Manage audit protocols
- Create and manage audit plans
- Assign audit responsibility
- Measure audit conduct, findings and results
- Track recommendations and corrective actions to closure

Benefits

- Enables you to avoid costly recurrences of problems by capturing and sharing the lessons learned from audits and inspections across your enterprise
- Delivers actionable information from audits and ensures timely follow-up to produce change and improvement in your operations
- Supports compliance with the mandatory quality-management element of ISO-9000, ISO-14000 and other international standards

Phase 1: Audit Planning

VISIUMKMS™ – Auditor includes a powerful audit planning tool that assigns priority based on configurable prioritisation factors that could include risk or criticality of the audited process, required audit frequency, quality or performance issues, previous audit results, etc. This provides users with an objective method of selecting audits into the overall plan. Once the audit plan is approved the selected audits are exported to Auditor for assignment to your audit teams.

Phase 2: Audit Preparation

VISIUMKMS™ – Auditor enables you to create custom protocols and checklists, which can be tailored to individual sites or business units, to support any required audit or review. Selection of a protocol automatically populates the questions to the audit record; however, additional custom questions can be added to any audit. Confidential audits can be restricted to allow access by the audit team and sponsor only.

Phase 3: Audit Process

VISIUMKMS™ – Auditor collects all the data related to an audit, i.e. responses to audit questions, findings, recommendations, completion date vs. target, and more. Auditors can attach relevant documents, drawings or photos to support their findings. Recommendations can be cross-linked to multiple audit questions and findings.

Phase 4: Corrective Action Request

VISIUMKMS™ – Auditor is seamlessly integrated with **VISIUMKMS™** – Resolution Tracker. Once the audit is complete, the auditor's recommendations are exported to Resolution Tracker.

Phase 5: Corrective Action Follow Up

VISIUMKMS™ – BadgerMail™ ensures that corrective actions are assigned to action owners and followed up in a timely fashion, with automatic escalation of overdue items to management. Overall audit program compliance and effectiveness can be monitored using **VISIUMKMS™** – Risk Intelligence dashboards and reports purpose-designed by professional auditors.



Auditor Process

visiumKMS™ – RISK INTELLIGENCE

Operational Risk Management Solution

Monitoring of key performance indicators is critical to realising the business value of a safety or audit management program.

VISIUMKMS™ offers powerful reporting capability via ad hoc and customised reports, which will be configured to meet your detailed requirements during system implementation. **VISIUMKMS™** also allows easy export of data from list views to standard office applications.

The Risk Intelligence module delivers powerful analysis to help drive improvement in your business. Controls and Data Services (CDS)

implementation consultants will work with you to design key performance indicators that will provide you with real insight into your compliance data and combine them into meaningful dashboards. Powerful filtering and targeted drill-downs allow users to quickly focus in areas that need attention.

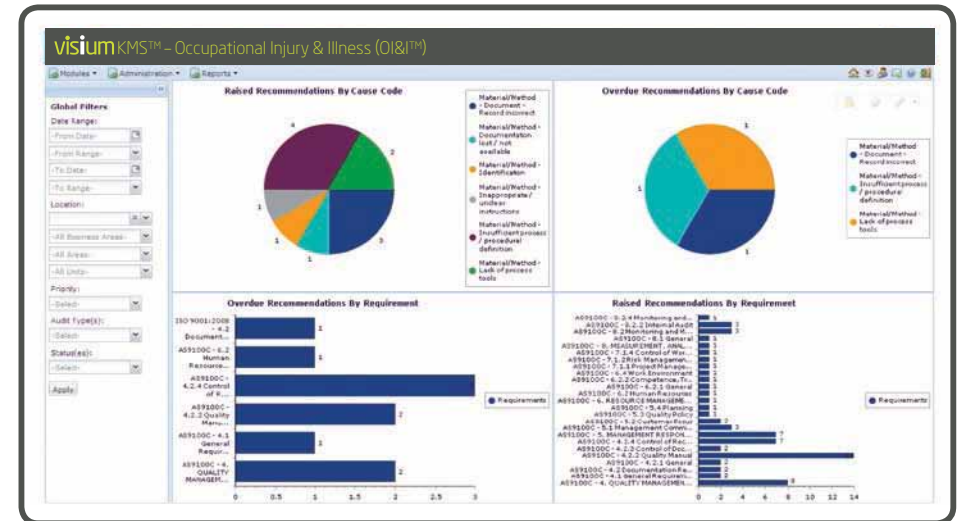
Individual users can then create custom dashboards by selecting from the pre-configured KPIs, reports and charts with specific filter settings to provide them with immediate access to the information they need to review every day.

Typical KPIs might include:

- Resolution Tracker: MOCs raised; Recommendations raised; Tracker items open; Tracker items overdue
- Investigator: Incidents occurred; Incidents closed; Incidents by cause
- Auditor: Audits completed vs. plan; Recommendations per requirement; Overdue recommendations

VISIUMKMS™
– Risk Intelligence
dashboards are configured to each customer's requirements, providing the deep insight needed to drive real business improvement...

A **VISIUMKMS™** customer demonstrated a significant improvement in unwanted incident rates over a 6 month period, by assiduously prioritising actions arising from incident investigations, combined with a program to educate employees on proactive reporting of near misses and sharing of lessons learned.



“The Risk Intelligence module delivers powerful analysis.”

visiumKMS™ – HOSTING SERVICE

Operational Risk Management Solution

VISIUMKMS™ Hosting Service provides the ultimate in security and availability together with an exceptional level of customer support. It reduces up-front investment and eliminates the IT complexity of rolling out and maintaining your **VISIUMKMS™**.

Controls and Data Services' (CDS) Hosting Service provides separate **VISIUMKMS™** databases, allowing each customer to maintain their own configuration and localisations. Once **VISIUMKMS™** has been implemented, customer administrators have full access to the **VISIUMKMS™** administration functions to enable them to manage user accounts and update application configuration. Users have access to the system from any Internet-connected computer, allowing them flexibility to work when and wherever they need.

The standard service level agreement offers 98% availability, excluding scheduled maintenance periods. Daily backups enable fast recovery with minimal data loss in the worst-case event.

Hosting or “Software as a Service”

Application hosting is offered as an additional service for customers who have purchased a **VISIUMKMS™** software license. Whether you are just starting out with **VISIUMKMS™**, or an existing customer looking to reduce your IT costs and complexity, **VISIUMKMS™** hosting may provide you with significant advantages. If you are a new customer, “Software as a Service” enables you to reduce up-front investment by bundling **VISIUMKMS™** software access with hosting into a single monthly fee.

Benefits

- Guaranteed upgrades to the latest version of **VISIUMKMS™** within 30 days of release, providing early benefits from new features and functions.
- No investment in servers, firewalls, storage solutions, security appliances, operating systems and database software.
- CDS manages all maintenance, upgrades and patches to hardware, operating system and databases: no annual maintenance payments; no worrying about whether a patch is compatible with **VISIUMKMS™**; no concerns about aging hardware or running out of disk space.
- CDS takes care of all **VISIUMKMS™** upgrade and maintenance tasks under strict change control processes: no need for your IT support organisation to have **VISIUMKMS™** expertise; no more waiting for the right IT person to become available or for IT “maintenance windows” to open.
- CDS service desk has complete access to the customer system to assist with issue resolution and database tuning.
- Separate production and staging environments enable testing and training with no impact on your day-to-day work.





Additional Services

Unlike an on-premise solution, customer administrators do not have direct access to the database, so maintenance of custom database views and ad hoc reports must be performed by CDS service staff. Access to these services can be provided as required on a time and materials basis, or an amount of additional support can be included in your hosting service fee.

Secure, Reliable, Compliant

The US-based production **VISIUMKMS™** hosting environment is located at Carpathia Hosting's Dulles, VA "Vault", which provides the maximum security available among commercial and federal data centres*. Constructed from the ground up to meet a superset of federal security mandates, this Tier III data centre is backed by a defense-in-depth strategy for comprehensive physical, network, and policy-based security assuring customers that even their most sensitive data will remain secure.

Carpathia maintains AT 101 SOC2 Type 2 (previously SAS 70) and EU Safe Harbour certifications, covering Security, Availability, Process Integrity, Confidentiality and Privacy. Carpathia also has experience in helping customers comply with industry and regulatory compliance requirements such as FISMA, DIACAP, HIPAA/HITECH, PCI and SOX.

The Vault data centre features concentric rings of physical and IT security. Its location at a major Internet connection hub, with service by multiple ISPs, ensures fast and reliable connections. And the Vault's technical specification ensures availability through multiple-redundant connectivity, power and cooling throughout the facility.

CDS contracts with Carpathia for a comprehensive suite of services to ensure that your data is protected and the **VISIUMKMS™** application is always available. For more information on the Vault and Carpathia, visit www.carpathia.com.

*Note that the UK-based **VISIUMKMS™** hosting environment uses Controls and Data Services-owned infrastructure, and offers a different level of security and service. Please contact your sales representative for details.



"The ultimate in security and reliability."

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