mCom ONE: The future of Machinery Safety Compliance

May 2019
The future of compliance management

- Challenges to Compliance
- Cloud based solutions
- Looking to the future
- mCom ONE
Challenges for compliance

- Standards: ISO, IEC, NFPA, CSA
- Legislation: Directives, Regulations
- Multiple Languages
- Machinery safety compliance
- Non-standard Processes
- Visibility across an organisation

Inputs
- Multiple-users, collaborating globally.
- Checklists and assessment types can be configured providing standardised processes
- Relevant data and documents stored centrally for all users to access
- Access by browser or Windows app on PC, laptop or tablet

Outputs
- Standard report formats, generated swiftly within the project
- Centralised data allows for analysis across an organisation
Problematic slow software systems, spreadsheets and other paper work systems are a thing of the past…bulky, problematic and difficult to manage with little to no transparency across multisite organisations.

mCom ONE now delivers a paperless solution, not only helping deliver efficiencies but to also help the environment.
Some standardisation
Updates still difficult
Multiple copies
No overall visibility without additional merging of data
More standardisation
Still difficult to update all instances
No visibility across an organisation without going to Excel etc
Multiple copies of databases
The future of compliance management

<table>
<thead>
<tr>
<th>Challenges to Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud based solutions</td>
</tr>
<tr>
<td>Looking to the future</td>
</tr>
<tr>
<td>mCom ONE</td>
</tr>
</tbody>
</table>
Cloud-based capabilities

**Inputs**
- Multiple-users, collaborating globally.
- Checklists and assessment types can be configured providing standardised processes.
- Relevant data and documents stored centrally for all users to access.
- Access by browser or Windows app on PC, laptop or tablet.
- Automatic, real time translation.

**Outputs**
- Standard report formats, generated swiftly within the project.
- Centralised data allows for analysis across an organisation.
Original workflow

- Supplier to the Automotive sector wanted to ensure new machines arriving at sites were compliant and safe to use.
- TÜV SÜD UK managed project including reviewing all reports to ensure standardisation
  - Assessment carried out using previous software
  - Databases sent to UK for review by assessor
  - Databases returned to assessor
  - Final report sent to client
  - Minimum 3 copies of all databases, which is the live data?

New Workflow

- Assessment carried out using new software
- Reviewer will receive notification of project to review
- Final report sent to client
- Only 1 copy of data
Example use case 2:

**Original Workflow**
- Global machine operator wants to manage machinery safety worldwide
- Assessments carried out independently on each site
- In order to see the overall corporate picture, Corporate EHS has to collate data from each site into one data set. At best this maybe combining Excel files, at worst manual questionnaires.

**New Workflow**
- All sites using central system
- Corporate EHS can run reports to view live data from all sites
- Reports can also be run at horizontal or vertical segments (divisional or area) to view picture within organisation
Example use case 3:

**Original Workflow**
- A global machinery supplier has sales offices in multiple countries, all of whom deliver CE marked systems for customers
- Without a standardised process, each country produces compliance documentation using a different methodology and format

**New Workflow**
- All countries using the same system
- Customers receive the same style of documentation, no matter where they are located
- The supplier can track projects centrally to review progress
The future of compliance management

Challenges to Compliance

Cloud based solutions

Looking to the future

mCom ONE
Digital evolution for the technical lifecycle of adaptive products and systems
Combining core know how and new technologies with safety domain expertise

Risk assessment 4.0 (IIoT)  Digitize risk assessment with mCom ONE  Integrate Hazards & Threats in Model based simulation  Runtime Certification Safety life cycle services

The digital twin integrates lifecycle phases and allows for hazard analysis at early stages

Lifecyle

mCom ONE: The Future of Compliance Management
The future of compliance management

Challenges to Compliance

Cloud based solutions

Looking to the future

mCom ONE
mCom ONE is a risk & safety management cloud software solution which empowers you to seamlessly integrate a “digital safety twin” for assets (machines & infrastructure) into your end to end business processes.
The vision for mCom ONE

Assessment Management

Cloud based mCom ONE platform: asset management and risk/hazard predictions

Machine + site specific safety predictions and solutions

Recommended TÜV SÜD services, based on smart “decision tree”

Collected asset, assessment and hazard data: Leverage “Wisdom of the Crowd”

Global safety standards and regulations

Distributed asset & safety user groups

Assessment

The vision for mCom ONE

"mCom ONE moves away from detecting PROBLEMS to providing SOLUTIONS"

"Shorten my time to market by covering safety in the early R&D phase"

"If global standards were a book with 1000 pages, mCom ONE enables me to read only the 5 which matter for me"

"Norms are translated in understandable checklists which can (partially) be answered by the customer!"

"Based on AI, mCom ONE detects risks/hazards before they occur"

"mCom ONE covers the safety dimension of your digital twin"
Target user groups

Manufacturer

I want to…
- Standardize CE markings globally
- Have one platform with one process
- Generate declarations and manuals with just a few clicks
- Know which regulation and checklist applies for my machine & customer

Integrator

I want to…
- compare safety-relevant requirements in a cloud based platform along 20 suppliers
- Keep safety traceable and centrally documented for all suppliers

Operator

I want to…
- Use pragmatic checklists instead of 60-page documents
- Know which items matter for me and which are irrelevant
- Exchange hazards globally
- Roll out global standards with a few clicks

Consultant

I want to…
- Run my projects more efficiently and
- Have remote workflows to reduce travel efforts
- Generate reports automatically
- Have state of the art usability and short loading times
- Work on- and offline
mCom ONE Software Preview: Login Page

mCom+

Username

Password

Remember username

Login

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Help Contact
mCom ONE Software Preview: Project List

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Site</th>
<th>Status</th>
<th>Machines</th>
<th>Hazards</th>
<th>Last modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beer bottling line 2</td>
<td>Red Bull GmbH</td>
<td>Energy Station</td>
<td></td>
<td>0/6</td>
<td>0/0/0</td>
<td>05-07-2015</td>
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<tr>
<td>Silverstone</td>
<td>Red Bull GmbH</td>
<td>Austria</td>
<td>0/1</td>
<td>0/1</td>
<td>0/0/0</td>
<td>25-06-2018</td>
</tr>
<tr>
<td>Red Bull Ring</td>
<td>Red Bull GmbH</td>
<td>Nascar Racing Team</td>
<td>0/2</td>
<td>0/2</td>
<td>0/0/0</td>
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<td>Windtunnel</td>
<td>Red Bull GmbH</td>
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<td>0/0</td>
<td>0/0</td>
<td>0/0/0</td>
<td>19-06-2016</td>
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<td>Energy Station</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0/0</td>
<td>19-06-2016</td>
</tr>
<tr>
<td>Beer bottling line 3</td>
<td>Red Bull GmbH</td>
<td>Energy Station</td>
<td>0/0</td>
<td>0/0</td>
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<tr>
<td>Beer bottling line 1</td>
<td>Red Bull GmbH</td>
<td>N/A</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0/0</td>
<td>19-06-2016</td>
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<tr>
<td>Keg Plant</td>
<td>Johnson &amp; Johnson</td>
<td>Vienna</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0/0</td>
<td>18-06-2016</td>
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<tr>
<td>Bottling plant</td>
<td>Coca Cola Ltd.</td>
<td>Munich</td>
<td>0/1</td>
<td>0/1</td>
<td>0/0/0</td>
<td>18-06-2016</td>
</tr>
<tr>
<td>Cyl looping Assessment</td>
<td>Johnson &amp; Johnson</td>
<td>London</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0/0</td>
<td>18-06-2015</td>
</tr>
<tr>
<td>Welding Machine</td>
<td>Red Bull GmbH</td>
<td>Fushih HQ</td>
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<td>0/0</td>
<td>0/0/0</td>
<td>18-06-2015</td>
</tr>
<tr>
<td>Cone</td>
<td>Red Bull GmbH</td>
<td>Fushih HQ</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0/0</td>
<td>18-06-2015</td>
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<tr>
<td>Bottling plant</td>
<td>Red Bull GmbH</td>
<td>Fushih HQ</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0/0</td>
<td>18-06-2015</td>
</tr>
<tr>
<td>Keg Plant</td>
<td>Red Bull</td>
<td>Fushih HQ</td>
<td>0/0</td>
<td>0/0</td>
<td>0/0/0</td>
<td>11-06-2018</td>
</tr>
</tbody>
</table>
mCom ONE Software Preview: Project Overview

- PROJECT
  - Machines: 84/12
  - Hazards: 14/21

- RISK ASSESSMENT
  - Critical Machines: 14/21
  - Unanswered Examinations: 253/1024

- IMPLEMENTATION STATUS
  - Red Bull GmbH: 79
  - NASCAR Risking Team: 40
  - PUVER Site Policies: 111

- Performance Level: 83
- Safety Integrity Level: 32
mCom ONE Software Preview: System Management - Users
# mCom ONE Software Preview: Hazard Pool Management

## mCom ONE: The Future of Compliance Management

<table>
<thead>
<tr>
<th>Hazard ID</th>
<th>Type</th>
<th>Rating</th>
<th>Description</th>
<th>Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.2</td>
<td>C</td>
<td>Very low</td>
<td>The E-Stop &amp; interlock devices associated with the equipment have not been tested as part of this as...</td>
<td>WRAPS Pool, Policies Pool Confirmed</td>
</tr>
<tr>
<td>1.2</td>
<td>A</td>
<td>Unacceptable</td>
<td>Electric shock due to direct contact with hazardous live parts within the electrical enclosures at the fall...</td>
<td>EN415</td>
</tr>
<tr>
<td>1.2.3</td>
<td>A</td>
<td>High</td>
<td>Injury due to a single fault as a result of the mains disconnection device and/or other mains operated...</td>
<td>EN415, Guarding</td>
</tr>
<tr>
<td>1.4</td>
<td>N</td>
<td>Significant</td>
<td>Electric shock due to inadequately supported conductors inside the electrical enclosure.</td>
<td></td>
</tr>
<tr>
<td>1.4.1</td>
<td>M</td>
<td>Medium</td>
<td>Ensure all conductors are adequately secure and supported in accordance with EN60204-1:2006, clause...</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>L</td>
<td>Low</td>
<td>Electric shock due to conductors that do not travel from fixed termination to fixed termination. * Choose...</td>
<td>SEMI Pool, Archived</td>
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<tr>
<td>1.5.0</td>
<td>C</td>
<td>Negligible</td>
<td>Confusion and/or injury due to lack of adequate electrical warnings being fitted to electrical enclosures.</td>
<td>CE Audit Pool, CE Audit Pool Confirmed</td>
</tr>
<tr>
<td>1.5.2</td>
<td>H</td>
<td>High</td>
<td>Cummins specification non compliance - No lighting tower or the existing lighting tower signals not co...</td>
<td>WRAPS Pool, Guarding</td>
</tr>
<tr>
<td>1.5.4</td>
<td>C</td>
<td>Very low</td>
<td>Electric shock due to confusion as a result of the machine being fitted with more than one supply disc...</td>
<td>WRAPS Pool, Policies Pool Confirmed</td>
</tr>
<tr>
<td>11.1</td>
<td>A</td>
<td>Unacceptable</td>
<td>Cummins non compliance - there is no electrical information plate on the machine</td>
<td>PUWERR88 Pool</td>
</tr>
<tr>
<td>123</td>
<td>A</td>
<td>Negligible</td>
<td>Assessment types test hazard</td>
<td>PUWERR88 Pool</td>
</tr>
<tr>
<td>2.1.2</td>
<td>M</td>
<td>Medium</td>
<td>The E-Stop &amp; interlock devices associated with the equipment have not been tested as part of this as...</td>
<td>WRAPS Pool, Policies Pool Confirmed</td>
</tr>
<tr>
<td>2.2.1</td>
<td>N</td>
<td>Significant</td>
<td>Non Compliance: Possible confusion as a result of the E-Stop being incorrectly identified.</td>
<td>WRAPS Pool, EN415, Archived</td>
</tr>
<tr>
<td>2.3.0</td>
<td>E</td>
<td>Extreme</td>
<td>Non compliance: This equipment appears to have been manufactured after Jan 1995 and does not carry...</td>
<td></td>
</tr>
<tr>
<td>234</td>
<td>S</td>
<td>Significant</td>
<td>Cummins specification non compliance - There is no voltmeter installed to verify electrical power is on...</td>
<td>CE Audit Pool</td>
</tr>
</tbody>
</table>
mCom ONE Software Preview: Adding hazards
### mCom ONE Software Preview: System Management - Standards

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Standard Number</th>
<th>Part</th>
<th>Type</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS EN</td>
<td>12635</td>
<td>+ A1 2008</td>
<td>C</td>
<td>Industrial, commercial and garage doors and gates</td>
</tr>
<tr>
<td>BS EN</td>
<td>349</td>
<td>+ A1 2009</td>
<td>A</td>
<td>Safety of machinery test</td>
</tr>
<tr>
<td>BS EN</td>
<td>12445</td>
<td>+ A1 2009</td>
<td>C</td>
<td>Industrial, commercial and garage doors</td>
</tr>
<tr>
<td>BS EN</td>
<td>61000</td>
<td>4-2</td>
<td>B</td>
<td>Electromagnetic compatibility (EMC)</td>
</tr>
<tr>
<td>BS EN</td>
<td>61496</td>
<td>1 + A1 2008</td>
<td>C</td>
<td>Safety of machinery - Electro-sensative protection equipment</td>
</tr>
<tr>
<td>BS EN</td>
<td>415</td>
<td>1 + A1 2008</td>
<td>B</td>
<td>Packaging machinery safety</td>
</tr>
<tr>
<td>BS EN</td>
<td>22334</td>
<td>2 + A1 2010</td>
<td>B</td>
<td>Safety of machinery - Two hand control devices test 696</td>
</tr>
<tr>
<td>BS EN ISO</td>
<td>12100</td>
<td>+ A1 2009</td>
<td>A</td>
<td>Safety of machinery - General principles for design</td>
</tr>
<tr>
<td>BS EN ISO</td>
<td>14122</td>
<td>2 + A1 2010</td>
<td>A</td>
<td>Safety of machinery - Permanent means of access to machinery</td>
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<tr>
<td>BS EN ISO</td>
<td>11234</td>
<td>2 + A1 2010</td>
<td>A</td>
<td>Packaging machinery safety</td>
</tr>
<tr>
<td>BS EN ISO</td>
<td>2223232</td>
<td>+ A1 2008</td>
<td>C</td>
<td>Electromagnetic compatibility (EMC)</td>
</tr>
<tr>
<td>BS EN ISO</td>
<td>22233</td>
<td>+ A1 2008</td>
<td>A</td>
<td>Safety of machinery - Positioning of safeguards with respect to the approach speeds of parts of the human body</td>
</tr>
<tr>
<td>BS EN ISO</td>
<td>222331</td>
<td>+ A1 2008</td>
<td>A</td>
<td>Safety of machinery - Electro-sensative protection equipment</td>
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<tr>
<td>BS EN ISO</td>
<td>22322</td>
<td>+ A1 2009</td>
<td>A</td>
<td>Safety of machinery - Guards</td>
</tr>
<tr>
<td>BS EN ISO</td>
<td>22323</td>
<td>+ A1 2008</td>
<td>C</td>
<td>Packaging machinery safety test 2</td>
</tr>
</tbody>
</table>

17 records found.
mCom ONE Software Preview: Report Generation

Non-Compliance Report

Checklist Report

Control Integrity Report

mCom ONE: The Future of Compliance Management
mCom ONE Software Preview: Corporate Dashboard

**HAZARDS IMPLEMENTATIONS**

- Not Implemented: 53 / 72
- Implemented: 11 / 72
- Accepted: 0 / 72
- Rejected: 0 / 72
- Risk Accepted: 8 / 72

**UPCOMING ACTION PLANS**

**HAZARDS WITHOUT ACTION PLAN**

20 / 0 Unanswered Checkpoints
### mCom ONE functionality

#### Phase 1: Current functionality
- Risk assessment methodology that complies with EN ISO 12100
- Hazard pool shared across the organisation
- Import of photographs as evidence of hazard and remedial action
- Copy machine within a project to streamline multiple assessments
- Project dashboard giving overview of project status
- Creation of Declaration of Conformity/ Incorporation when applicable
- Reporting within completed project
- Online browser access
- Offline functionality by Windows 10 App

#### Phase 2: Future functionality
- Document upload to provide easy access to machine information
- Dashboard functionality to allow reporting at corporate level
- iOS App for offline functionality
- Notification of changes to a project
- Automatic translation based on user log-in
- Action plan/ task management to manage remedial actions
- Links to external software (e.g. SAP)
mCom ONE Feature Overview

<table>
<thead>
<tr>
<th>Feature</th>
<th>Bundled Version</th>
<th>Pro Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global cloud storage of safety and asset content (sites, machines, reports, assessments, pictures, etc.)</td>
<td>(TÜV SÜD projects)</td>
<td>(all your projects)</td>
</tr>
<tr>
<td>Update risks, hazards and control measures in your safety projects</td>
<td>(TÜV SÜD projects)</td>
<td>(all your projects)</td>
</tr>
<tr>
<td>Project dashboard, diagrams and analytics</td>
<td>(TÜV SÜD projects)</td>
<td>(all your projects)</td>
</tr>
<tr>
<td>Collaboration function – company internal and with external experts</td>
<td>(TÜV SÜD projects)</td>
<td>(all your projects)</td>
</tr>
<tr>
<td>One checklist from TÜV SÜD pool – incl. related hazards</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Use of checklists for running your own risk assessments</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Access to hazard pool and hazards recommendation engine</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Reporting engine – automatic generation of reports</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Generating declaration of conformity (ICE marking)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Standard API for external connectivity – import &amp; export of data</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Automatic update of references to standards and norms</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Company-wide safety and asset dashboard</td>
<td>-</td>
<td>Developed in Q3-19</td>
</tr>
<tr>
<td>Safety action plan and task tracking</td>
<td>-</td>
<td>Developed in Q3-19</td>
</tr>
</tbody>
</table>

**Additional Services**

- Free one-day onboarding workshop to fit mCom ONE to your business
- Selection of additional checklists from TÜV SÜD checklist pool
- Migration of existing safety data (from TÜV SÜD or third-party applications)
- On-site or web-based training: Software training (1 day) or Risk Assessment Training (3 days)
- Installation support for on-premise version
- Development of company-specific checklists / assessment types
- Customization of interfaces to existing systems
- App for offline work including synchronization when back online

Start your mCom Journey here: www.tuvsud.com/mcomone
Thank you for watching

www.tuvsud.com/mcomone