@RISK
Palisade’s @RISK provides quantified results which can be used by the decision maker as a basis to develop appropriate measures to mitigate or manage risk. @RISK replaces fixed model input assumptions with user-defined probability distributions and then conducts a 'what if' Monte Carlo simulation thousands of times. Results are presented in a clear and user-friendly visual format. @RISK produces a full statistical report on simulations. One-page “Quick Reports” can be produced with a single mouse click. These include graphs, tornado charts for sensitivity analysis and summary statistics. The software is accompanied with a free tutorial. Making the best decisions means performing risk analysis. @RISK offers an easy, affordable, and effective way to start performing risk analysis in the familiar Excel environment. Palisade also provides hands on training, tailored training and risk consulting.

www.palisade-europe.com

ACTIVE RISK MANAGER (ARM)
ARM increases the quality and efficiency of our customers' management processes by providing a single solution to help reduce risks, issues and re-occurring losses with the necessary mitigation strategies. ARM is unique in its ability to support multi-cultural processes from different departments (Corporate, Audit, Management, Projects), consolidating data from multiple sources and providing multiple views determined by risk appetite and maturity. The software also supports many global standards including Sox 404, FSA, COSO, Turnbull, AS/NZS 4360:2004, PAS 55 and CMMI Maturity. The ability to quantify actual and forecasted data to calculate the return on investment obtained from risk mitigation is a key driver to increasing profit margin. The ROI from using ARM includes reduced insurance premiums, increased efficiency, speed and quality of reporting, applying the correct levels of provision to generate more revenue and achieve the objectives and expectations of the business.

www.strategicthought.com

AGENA RISK
AgenaRisk offers a unique risk analysis and knowledge-based decision support solution to help organisations gain competitive advantage and enhance value for stakeholders. Using the latest developments from the field of artificial intelligence, AgenaRisk provides enterprise level modelling and predictive analytics to support business critical decision making, enabling senior management to focus on the key risks and controls within their business. AgenaRisk is deployed across a number of industry sectors including banking, defence, aerospace, energy, telecoms and technology, supporting key business issues including operational risk, business continuity and ensuring the safety and reliability of critical systems.

www.agenarisk.com

ASCERTUS GOVERNANCE
Acertus Governance was conceived, designed and built as a dedicated ERM application, focussed on improving business performance through the context of embedded risk management responsibility, accountability and reporting, across the enterprise, directly linked to hierarchies of strategic objectives throughout the business. The product encompasses operational, business and reputation risks and also acts as a graphical dashboard for all the risks a company faces, whether managed within Acertus Governance or not. Acertus Governance captures risk, control, action and loss information through a flexible categorisation data structure that can be tailored to specific organisations. Both qualitative and quantitative scoring is supported concurrently, and through multiple hierarchical definitions and inter-relationships between risks, controls, actions and losses, a comprehensive capability to aggregate risk data both vertically and horizontally across the business provides for valuable analysis. The product provides a comprehensive solution to the enterprise and governance level requirements of any organisation, supporting multiple languages and currencies, with all the necessary features to manage risks enterprise-wide and provide visibility of all other risk areas of the business. Usability is the primary product strength. This, combined with the audit and assurance features of the application provide an opportunity for meaningful input of risk, control, action and loss data, resulting in credible and assured reports to support strategic decision making.

www.riskgovernance.com
BPS OPRISK

BPS OpRisk can accommodate a range of risk quantification algorithms that can be applied to assessable entities, risks, controls, or any other object within our system. Users can add, modify or delete any formula using the familiar Excel interface. BPS helps organisations meet an array of compliance regulations (including SOX, PCAOB, NASD 3030) with a flexible solution based on both a control-centric approach and a risk-principled philosophy. BPS can handle most any compliance or regulation. The tool allows users to gather internal and external loss data as well as supplemental RCSA data, and then analyse the inputs to help identify capital allocation needs and to quantify operating risk. Once Action Tracking and KRI data and triggers are incorporated, the result is an overall improvement in understanding, anticipating, and measuring operating risk. BPS OpRisk is available on its own, or as a part of BPS Suite – a platform that also integrates audit and compliance activities.

www.bpsinc.com

CRYSTAL BALL

Crystal Ball from Oracle is a spreadsheet-based software suite for predictive modelling, forecasting, simulation, and optimisation. Used by 85 per cent of the Fortune 500, Crystal Ball provides an insight into the critical factors affecting risk, and calculates the likelihood that you will reach your objectives. Crystal Ball Services provide comprehensive risk analysis training and consulting.

www.crystalball.com

CS STARS

CS STARS delivers software and services for managing risk, claims, and insurance. More than 1,000 organisations and 35,000 users across the globe rely on CS STARS’ solutions for consolidating risk information, analysing and reporting risk exposures, administering claims, tracking corporate assets, and automating compliance audit processes. Our comprehensive, web-based solutions include data transformation services to support the consolidation of risk and claims information from multiple carriers and administrators into a single, comprehensive data repository; claim and incident event management tools including internet-accessible claim reporting tools to expedite claim interventions; workflow management features to automate routine risk and claims management tasks and notify users of events warranting special attention; standard report templates, ad-hoc reporting capabilities and the ability to automatically distribute reports to both system and non-system users; tools to track complex insurance policy designs and monitor policy erosion; property, fleet and asset management screens to collect asset values and support insurance policy renewal discussions; solutions to enhance business audit data collection and improve audit remediation plan monitoring; and multi-lingual and multi-currency support for use worldwide.

www.csstars.com

FIGTREES RMS

Figtree Systems is an independent supplier of risk and claims management information systems. Figtree RMS is proven in over 700 organisations, encompassing over 5,000 users globally. The key benefits gained by using Figtree RMS are: specialised RMS system for risk incidents and claims management; secure web access for remote workers, policy holders and third parties; flexibility - users adapt the system immediately to changing requirements; powerful data validation, audit and security functions and ad-hoc and standard reporting.

www.figtreeystems.com

IT-GRC

Agiliance IT-GRC enables businesses to develop a holistic view of their IT risk and compliance posture in order to make better business decisions. The Agiliance IT-GRC platform is the first solution that combines a robust common control framework with sophisticated policy management, workflow, and automation, providing internal and external stakeholders with a transparent methodology for reducing IT-related risk while increasing operational efficiencies and decreasing time to compliance. Agiliance IT-GRC was built to eliminate risk and compliance information silos. Version 3.0 links IT risk to overall enterprise risk and delivers the process and policy automation required for real-time risk and compliance management. With these enhancements, Agiliance has delivered a fully automated IT-GRC solution capable of managing the entire IT risk and compliance lifecycle. Agiliance IT-GRC 3.0 overcomes the barriers to effective IT risk and compliance management by adding automated risk management tools based on standard ERM methodologies and customisable key risk indicator (KRI) dashboards. By using web-based surveys and workshops to gather opinions from multiple stakeholders across multiple divisions and geographies and combining the results with automated IT risk data from the underlying infrastructure, Agiliance IT-GRC 3.0 provides the holistic view and feature set required to implement effective ERM programs.

www.agiliance.com

JCAD RISK

JCAD have been developing specialist claims and risk management applications for 15 years and now have a client base of over 150 organisations. The JCAD RISK solution was developed with input from key local authority clients and conforms to the risk management standards as advocated by ALARM, AIRMIC and the IRM. The application enables risks to be linked at any point within an organisation’s hierarchy as well as associated with corporate objectives, plans and processes. It also provides the client with the ability to easily customise the intuitive User Interface; in this way the application is shaped around the existing risk framework, not the other way around. The system makes use of a traffic light methodology allowing risks to be assessed at Gross, Net and Target stages whilst extensive workflow capabilities allow risk and control measure reviews to be automatically generated and audited. Reporting is powerful, flexible and customisable.

www.jcad.co.uk

KEANE SCORE

Keane Business Risk Management Solutions delivers the tools and expertise to build or enhance a comprehensive ERM and compliance program. Our proven solutions include both technology-based tools and professional Risk Management
consulting services to meet any organisation’s needs – regardless of your ERM maturity level. Keane SCORE is a patent-pending solution that truly enables an organisation to Measure, Manage and Monitor risk enterprise-wide. Score’s ASP model facilitates collaboration in assessing, benchmarking, reporting and overseeing all aspects of risk and compliance management – including modules that address the Total Cost of Risk, Risk-Based Capital Management and Internal Audit in an integrated platform. Score has ready-made solutions for compliance with a variety of FSA and SEC regulations (ICAS, FSA broker compliance, SOX etc) plus it can be fully customised for tailor-made risk and compliance applications.

www.keane-brms.com

KNOWRISK
KnowRisk goes beyond risk management features to give a user-friendly desktop interface and intuitive data management handling. KnowRisk is based on the AS/NZS 4360 risk management standard. Its customisable views allow different risk management strategies to be dealt with; proven now for general risk management, audit, controls self assessment, compliance, safety and environmental management, business continuity and project risks. A number of customers have progressed an integrated framework under ERM with KnowRisk as the underlying platform.

www.corprofit.com

MIMS RM
MIMS RM is designed as a comprehensive but simple risk management application that allows users to embed processes across the organisation. MIMS RM uses a single Risk Register overlaid with a Risk Filter and Aggregate Risk Matrix - to view and report on risks of immediate interest. The system is primarily objectives-driven, compares risk to appetite (adjusted for different organisational levels) and inter-ala records control measures, attaches documentation and automatically follows up actions. Each risk can be further assessed for its impact on key process continuity, resultant actions are managed and recovery plans incorporated. An audit feature is included to assure that risk management is adding to proper control and good governance.

www.stewartsoftware.co.uk

MKINSIGHT
MKinsight is a fully web-enabled risk management system designed to be highly flexible enabling users to create and assess risks based on their own chosen methodology. The range of information that can be attributed to an individual risk is diverse and fully user definable. In addition, the user can record Controls, Proposed Controls and Actions associated with each risk. As a .Net application MKinsight allows to you to manage user privileges and access rights across the entire system. MKinsight also comes with a comprehensive set of alerts to keep users and risk owners fully aware of outstanding risk assessments and actions, for instance. MKinsight includes comprehensive processes for all risk creation and approval processes along with detailed reporting capabilities in which the user can specify and filter a whole array of different reports which can then be exported to Word, Excel, Adobe (as .pdf files), html, .csv and text files.

www.mkinsight.com

OPTIAL
Optial provides a flexible, scalable system to effectively manage the human side of all risk and compliance processes. It monitors, supports and controls how people work within a company’s processes and rules. By using Optial to provide a structured framework, organisations can manage risk more effectively, protecting against financial and legal liability. Optial enables organisations to collect qualitative information which can then be weighted, scored and rated to enable quantitative comparisons and benchmarking. The software includes a comprehensive suite of standard and parameter driven reports, such as dashboards, indicators, lists or highly formatted reports. These can be presented graphically with drilldown to source data supported throughout. Optial’s new generation reporting tool, Optial Business Intelligence (OBI) provides expanded reporting options that include the ability for users to browse OLAP cubes with a slice and dice style browser, allowing the formulation of grids and charts with graphical output.

www.optial.com

METHODWARE
Enterprise Risk Assessor (ERA) from Methodware is a functionally rich tool that is applicable across multiple industries and all facets of governance, risk and compliance. ERA gives users the flexibility to collect information from across an organisation, analyse that information, and present structured, tailored and timely reports to all stakeholders. Methodware has developed a number of Starter Kits that can be imported into ERA. These Starter Kits are preconfigured with a number of legislative and regulatory requirements, including Sarbanes Oxley, Basel II, MiFID and FSA Compliance (ICAP).

www.methodware.com

PENTANA
Pentana provides a structured risk register, can analyse risks in many different ways, and allows for documentation of detailed external risk reviews as well as full subsequent action tracking. It also enables the assessment of risks against actual or possible mitigations. Agreed actions to mitigate risk are identified and tracked to completion. With Pentana, risks are scored before and after mitigation by likelihood and impact to see that they are under the overall target level. Reporting includes standard and user defined reports as well as specific links to Word and Excel. Pentana includes features to assist in running a risk management department as well as including a straightforward web-based risk register aimed at self assessment of risks and mitigations/controls. Independent risk reviews with testing of controls are fully supported.

www.pentana.com

PERTMASTER
Pertmaster manages risk by modeling estimate uncertainty, task existence, probabilistic branching and discrete risk events through a comprehensive Monte Carlo simulation engine. Pertmaster works with MSP, Primavera and Open Plan project schedules. Providing both a Monte Carlo analytics engine together with a
feature-rich risk register, Pertmaster models all types of project risk from estimate uncertainty through external risk events. It quantifies risk through determining the probability and impact of risk and uncertainty. This then gets applied to the relevant areas within the project and forms the basis of a risk simulation.

RISK CONSOLE
Aon RiskConsole is a web-based risk management information system that facilitates the management and analysis of incidents, losses, policy, risks and exposure information. RiskConsole provides a comprehensive view of an organisation’s risk and improves risk management practices. Organised as a series of integrated modules, RiskConsole has been designed to accommodate the administrative, reporting and analytical needs of insurance and risk management operations. An extensive set of standard report templates are available, and are customisable allowing KPIs to be monitored, trends identified and tracked with automatic alerts and comprehensive ad-hoc querying. Full service support is included to optimise system usage. While Aon RiskConsole is an intuitive application, training courses are also tailored to the client’s business processes, roles and skill levels. Aon RiskConsole supports a wide range of risk management initiatives including support for current legislation such as SOX and Basel II.

RISK ASSESSMENT SOFTWARE SUPPLEMENT > PRODUCTS

STREAM
Stream is available in two versions: Stream Dashboard provides real-time management dashboards and reports that provide a consistent integrated view of the risks to business performance. Gauges and barometers provide ‘at a glance’ views of current residual risk and compliance status with drill-down and aggregation through the enterprise. A set of real-time graphical reports includes Top 10 Risks, Risk History, Compliance History, Action Status and Return on Investment. Stream Dashboard is used for Enterprise-wide Corporate and Programme/Project Risk Management and Reporting. Stream Standards provides all of the features of Stream Dashboard and in addition monitors real-time compliance and residual risk status against any control standard. Stream Standards is used for enterprise-wide operational risk management where clients wish to measure their risks in relation to their compliance with control standards, such as regulatory compliance, security, health and safety and business continuity. With Stream, users have visibility in real-time of whether their area of responsibility is operating within or above its appetite for risk, measured in relation to business objectives and targets. Users can easily drill down to investigate areas of concern and, subject to user permissions view aggregate risk and compliance status.

WEBRISK
Completely web-based, WebRisk requires no third party software to run and is generally delivered hosted on an unlimited user basis. WebRisk is modular and encompasses renewal data gathering, insurable and non-insurable risk identification, evaluation and control, policy management and incident/claims management. It also has an ad-hoc report writer and a comprehensive suite of tailorable reports. WebRisk is commonly used as a risk portal across the enterprise, providing local managers with information as well as gathering risk profile information and incident notification.

WEBCONSO
Deltek WelcomRisk provides a structured means of identifying, responding to, and reporting project risks. Risks are identified, categorised, and quantified using a comprehensive risk register. All identified risks are centrally logged and are typically associated with different elements of a project or organisational structure. Deltek WelcomRisk aims to simplify identification, management and response to risks, whether threats or opportunities. The ability to export real risk to a Monte Carlo analytics system enhances the quantitative risk analysis. The software is used globally in the aerospace and defence, healthcare, IT, construction, and oil and gas industries. Deltek WelcomRisk supports PMI PMBoK, US DOD 5000 and AS/NZS 4360:2004.

THEESIS
Thesis uses the ‘bow-tie’ concept to assist the user in analysing and managing the major risks (including health, safety, environment, security and business continuity) facing their businesses. A structured process allows the user to identify each hazard, consequences, controls (barriers) and escalation factors. It then identifies the critical tasks to maintain these control measures and assigns responsibility to appropriate individuals. Thesis provides a quick, cost-efficient and rigorous method for analysing hazards and their controls. It provides an increased ability to communicate hazards and controls.
## General

<table>
<thead>
<tr>
<th>Feature</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full process analysis hierarchy</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Full process escalation hierarchy</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Objectives hierarchy</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Asset hierarchy</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Financial accounts hierarchy</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Expand and collapse hierarchy</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Risk assessment / analyses</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Audit findings / trail / log</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Scalable and tested to 100 users</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Scalable and tested to 1,000 users</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Scalable and tested to 10,000 users</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Automatic alerts</td>
<td>☑</td>
<td></td>
</tr>
</tbody>
</table>

## Risk Identification

<table>
<thead>
<tr>
<th>Feature</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge base</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Risks and issues</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Custom IDs</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Risk description</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Risk estimation</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Risk categorisation</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Risk treatment</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Risk register</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Risk quantification</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Risk comments</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Linked documents</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Loss and Accident identification</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>Linking losses to risk</td>
<td>☑</td>
<td></td>
</tr>
</tbody>
</table>
### Risk Assessment

**Risk matrix**

<table>
<thead>
<tr>
<th>Gross, Residual, Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

**Impact categories**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**Scoring schemes**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**Qualitative Assessment**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**Quantitative Assessment**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**Gross, Residual, Target**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**Opportunity**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**Frequency**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**Financial years modelling**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**Multiple risk impacts for single risks**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**ROI**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**Escalation**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

### Risk mitigation

**Control type**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**Control description**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**Control status**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**Control Assessment - qualitative and quantitative**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
### Control effectiveness
- Evaluation
- Testing
- Actions
- Fallback
- Plan
- Waterfall charts
- Provision management
- Plans linked to multiple risks
- Linked actions to multiple plans

### Analysis and Reporting
- Multiple application reporting
- Standard reporting
- Aggregated risk matrix
- Monte Carlo simulation - cost
- Monte Carlo simulation - schedule
- Sensitivity analysis
- Provision management
- Drill-down interactive reports
- Schedules reporting
- Data driven reporting
- Report delivery
- Risk adjusted balanced score cards
- Risk adjusted GANT chart

### Functionality / administration
- Context sensitive help
### Screen customisation
- ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●