

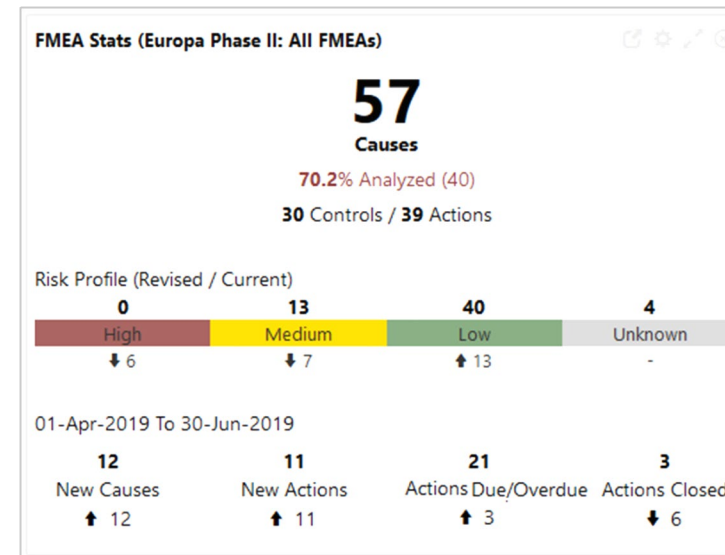
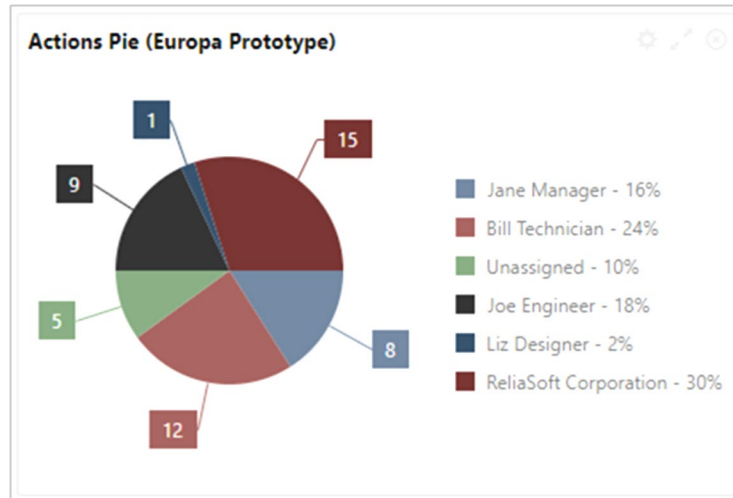
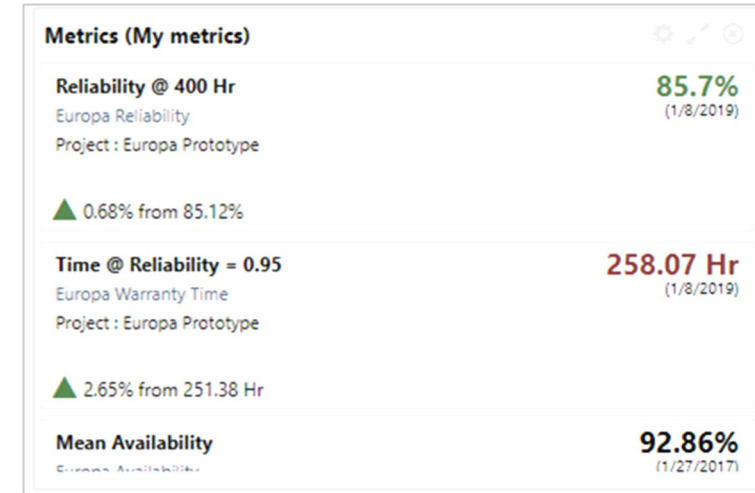
ReliaSoft SEP

WEB PORTAL FOR RELIASOFT APPLICATIONS

ReliaSoft  **SEP**

SEP is a web portal for analyses performed in ReliaSoft applications

- Monitor KPI metrics
- Web access to FMEA stats, queries and data
- View results from Weibull++, BlockSim and other reliability analyses
- Drill-down to full details in desktop apps
- Track and update assigned actions



▲ Managers

- Track KPIs, reports and status of assigned actions
- Monitor progress on FMEAs and sign off on completion
- Monitor results from other reliability analyses



▲ Engineers (ReliaSoft Desktop Users)

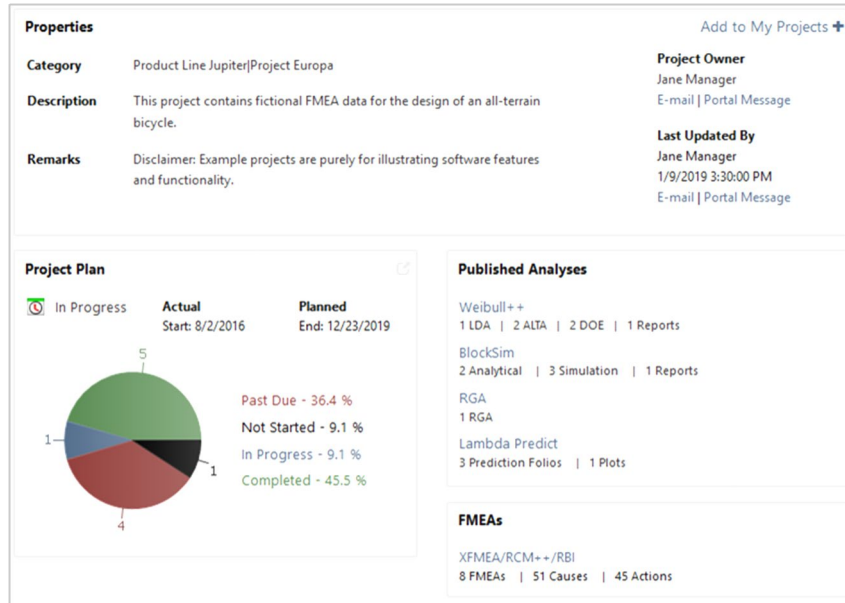
- Share your own results and stay up-to-date on analyses performed by others
- Convenient mobile access when you need to present findings or update your assigned actions



▲ Entire Organization

- Access lessons learned from FMEAs
- View results from reliability data analyses and simulations
- Update your assigned actions without having a ReliaSoft desktop application installed





Challenge: Individual analysts are performing a variety of reliability studies, but the latest results and metrics are not accessible to colleagues who don't have the software installed

Solution: SMEs use **Weibull++**, **BlockSim**, **Lambda Predict**, **XFMEA** and **XFRACAS** to perform the analyses

Managers and others use **SEP** to view selected results, reports and dashboards via any web-enabled device

Value: Facilitates collaboration between different areas of expertise

Shares reliability analysis results throughout the organization

Properties		FMEA Stats	FMEA
	Description	RPNi	RPNr
	Function: Provide the correct level of friction between brake pad assembly and wheel rim to safely stop bicycle in the required distance, under all operating conditions.		
	Failure: Insufficient friction delivered by hand brake subsystem between brake pads and wheels during heavy rain conditions.		
	Grouped Effects: Bicycle wheel does not slow down when the brake lever is pulled potentially resulting in accident. (10,-)		
	Causes:		
	Cable Binds due to inadequate lubrication	360	40
	Actions: Redesign hand brake cable routing to reduce friction and make system insensitive to lubrication degradation Modify bicycle durability testing to include periodic brake cable checks for binding		
	Controls: Hand Brake Design Guide #123 Bicycle system durability test # 789		
	Cable breaks	240	30
	Actions: Require cable DFMEA and PFMEA from cable supplier approved by All-Terrain FMEA team Based on results of Cable DFMEA, develop cable strength test and modify cable design to improve strength		
	Controls: Cable material selection based on ANSI #ABC. Bicycle system durability test # 789		
	Function: Brake system is easy to adjust and keep in optimal working order.		
	Failure: Brake system misadjusted by bicycle user		
	Grouped Effects: Brake system does not stop bicycle in required distance or is erratic, potentially resulting in accident. (10,-)		
	Causes:		
	Brake cable misadjusted by bicycle user	300	40
	Actions: Revise the bicycle durability test regimen to periodically check for brake cable misadjustment Revise the design review for brake system to include review of brake adjustment mechanisms.		

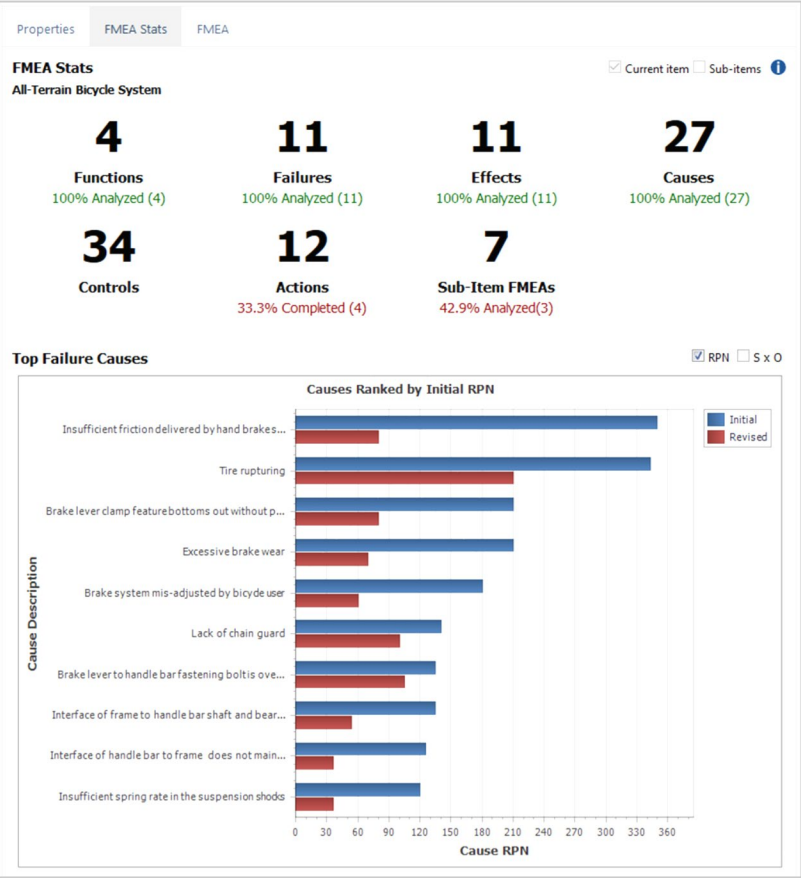
Challenge: Your organization makes a significant investment to perform FMEAs, but the valuable lessons learned are not easily accessible to all personnel who need the information

Solution: FMEA teams use **XFMEA** to perform the analysis

Managers and others use **SEP** to view and query the most up-to-date analyses

Value: More effective knowledge sharing leads to better products and better customer service

Potential cost savings when you implement **XFMEA** with **Prenscia Access** and **SEP**



Challenge: Your organization has multiple teams working on different FMEAs and managers need to stay up-to-date on the potential risks, assigned actions and whether the analyses will be completed on time

Solution: FMEA teams use **XFMEA** to perform the analysis

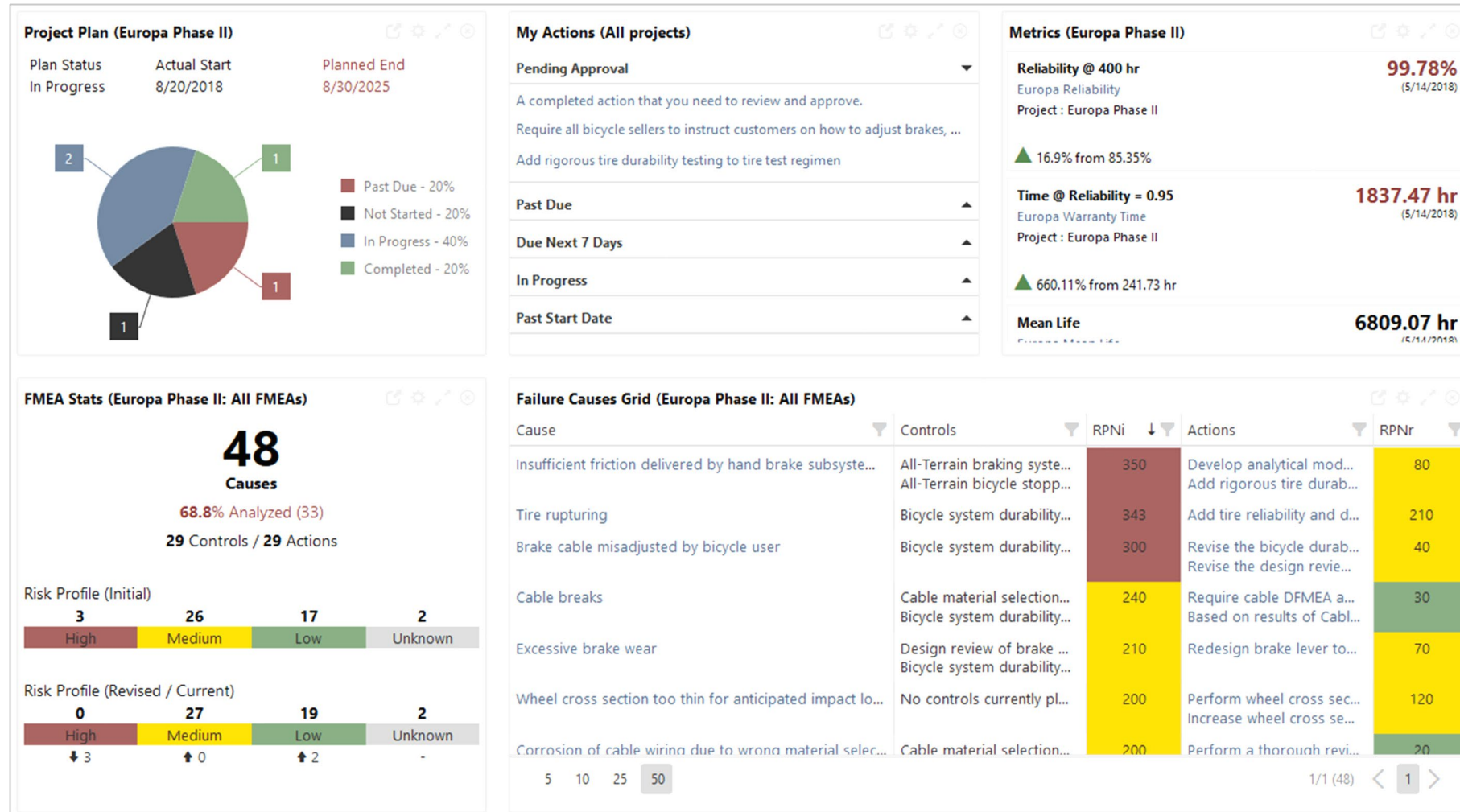
Managers use **SEP** to review summaries and sign off on completed projects via any web-enabled device

Value: Convenient tools to monitor progress leads to better program management

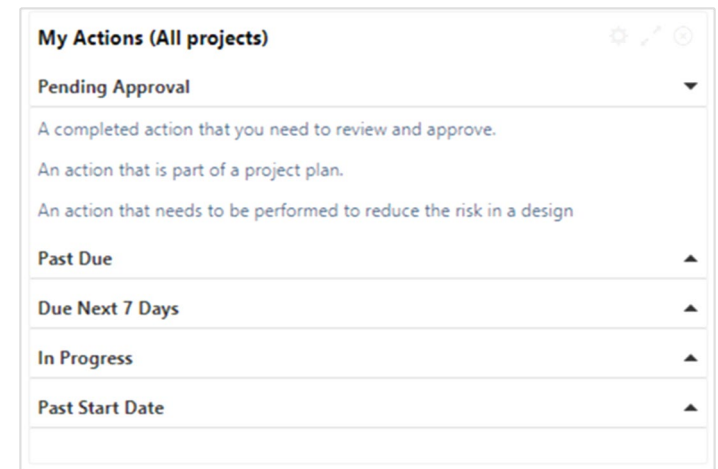
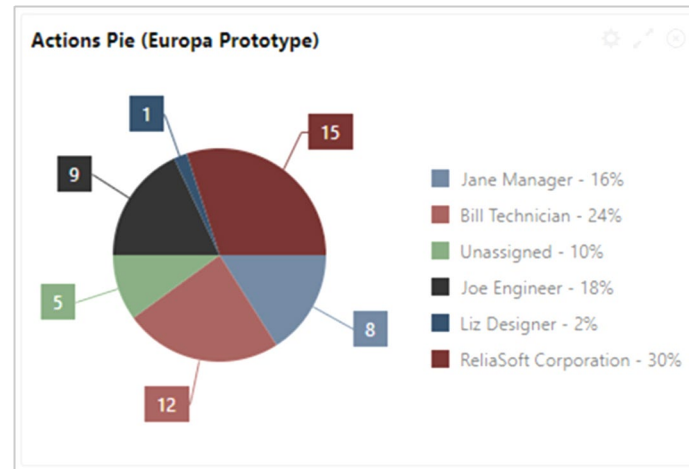
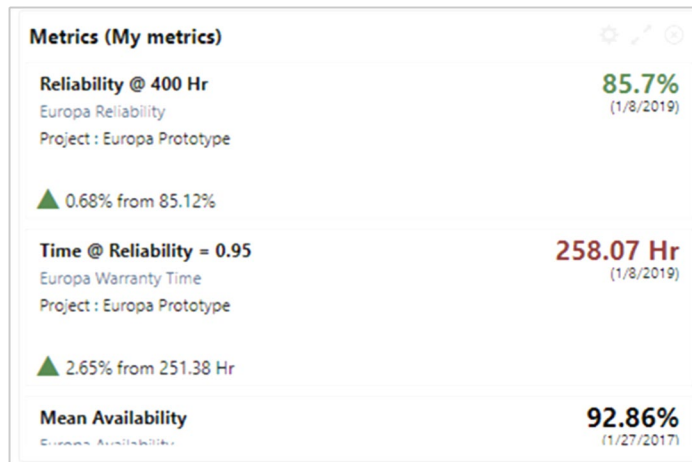
Effective management of FMEA activities leads to improved designs and less risk

Web dashboard for reliability analysis

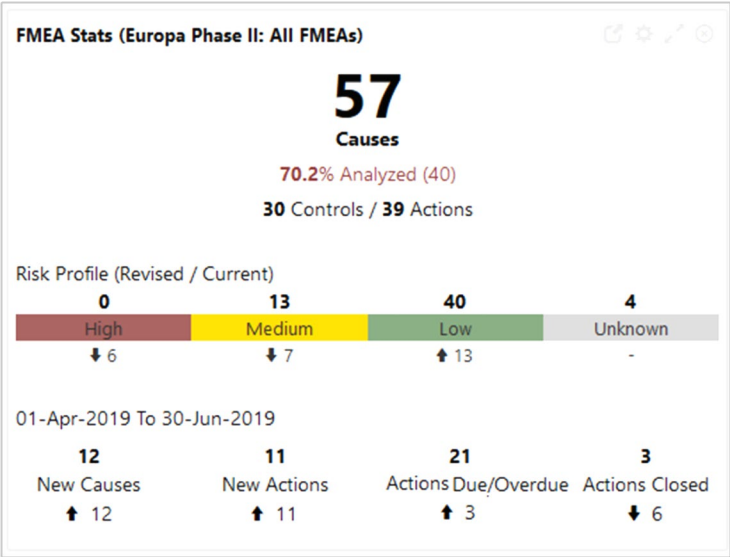
- Personalized home page features a configurable, at-a-glance **web dashboard** for the reliability metrics, FMEAs, actions and reports you're tracking in SEP



- ▲ **Metrics** – track key performance indicators such as Reliability, Mean Life, Warranty Time or Expected Failures
- ▲ **Actions Grids and Pie Charts** – track assignments based on completion status, due date or person responsible
- ▲ **My Actions** – quick access to the pending actions that are relevant to you
- ▲ **FRACAS Incidents and Actions** – monitor unclosed incidents and open actions in XFRACAS where you are the owner



- Failure Cause Grids – prioritized list of potential failure causes with the controls and actions that mitigate the risk
- FMEA Stats and Grids – at-a-glance metrics for an FMEA or combined from a group FMEAs, such as:
 - Record counts and % analyzed
 - Risk profiles and % reduction in RPN
 - New risks and actions in a specified time period (this quarter, last 30 days, ...)



Failure Causes Grid (Europa Phase II: All FMEAs)

Cause	Controls	RPNi	Actions	RPNr
Insufficient friction delivered by hand brake subsystem	All-Terrain braking system All-Terrain bicycle stopping	350	Develop analytical model Add rigorous tire durability	80
Tire rupturing	Bicycle system durability	343	Add tire reliability and durability	210
Brake cable misadjusted by bicycle user	Bicycle system durability	300	Revise the bicycle durability Revise the design review	40
Cable breaks	Cable material selection Bicycle system durability	240	Require cable DFMEA analysis Based on results of Cable	30
Excessive brake wear	Design review of brake Bicycle system durability	210	Redesign brake lever to	70
Wheel cross section too thin for anticipated impact load	No controls currently planned	200	Perform wheel cross section Increase wheel cross section	120
Corrosion of cable wiring due to wrong material selection	Cable material selection	200	Perform a thorough review	20

5 10 25 50

1/1 (48) < 1 >

Reliability analysis summaries, metrics and reports

At-a-glance summaries for ReliaSoft analysis projects you have permission to view

Project Summary: Europa Prototype

Change Project

Properties

Add to My Projects +

Category

Product Line Jupiter|Project Europa

Description

This project contains fictional FMEA data for the design of an all-terrain bicycle.

Remarks

Disclaimer: Example projects are purely for illustrating software features and functionality.

Project Owner

Jane Manager

E-mail | Portal Message

Last Updated By

Jane Manager

1/9/2019 4:42:24 PM

E-mail | Portal Message

Project Plan

In Progress

Actual

Planned

Start: 8/2/2016

End: 12/23/2019

Past Due - 36.4 %

Not Started - 9.1 %

In Progress - 9.1 %

Completed - 45.5 %

Published Analyses

Weibull++

1 LDA | 2 ALTA | 2 DOE | 1 Reports

BlockSim

2 Analytical | 3 Simulation | 1 Reports

RGA

1 RGA

Lambda Predict

3 Prediction Folios | 1 Plots

FMEAs

XFMEA/RCM++/RBI

8 FMEAs | 51 Causes | 47 Actions

Actions

Enter text to search...

Person Responsible	Action	Start Date	Completion Date
→	Status: Past Due		
→	Status: Not Started		
→	Status: In Progress		
→	Status: Completed		

Project Metrics

Reliability @ 400 hr

Europa Reliability

Project : Europa Prototype

91.3%

(1/9/2019)

▲ 0.22% from 91.09%

Mean Life

Europa Mean Life

Project : Europa Prototype

6176.02 hr

(1/9/2019)

▼ 0.14% from 6184.72 hr

Time @ Reliability = 0.9

Europa Warranty Time

Project : Europa Prototype

471.68 hr

(1/9/2019)

▲ 2.69% from 459.32 hr

Links/Attachments

Add

Word Document Saved in DB.docx (.docx)

Word document that is stored in the database

📎 ✎ ✕

File on Network.pdf (File Link)

Link to file on the network - works only if the link is valid for the user's PC

📎 ✎ ✕

http://www.reliasoft.com (URL)

URL link to website

📎 ✎ ✕

- For reliability analyses performed in **Weibull++**, **BlockSim** or **Lambda Predict**, analysts can decide which results and metrics to make available via the web

Published Analyses: Weibull++

Europa Phase II

- Life Data
 - Life Data Analysis
 - Data1**
 - Nonparametric LDA
 - Life-Stress Data
 - Accelerated Test
 - Data1
 - DOE
 - Standard Design
 - Degradation
 - Degradation Analysis (LDA)
 - Reports
 - Europa LDA Report

Analysis Overview Plot Identifiers [Open](#)

Life Data

Reliability @ 400 hr **99.78%**
Europa Reliability (5/14/2018)
Project : Europa Phase II
▲ 16.9% from 85.35%

Mean Life **6809.07 hr**
Europa Mean Life (5/14/2018)
Project : Europa Phase II
▲ 743.56% from 807.18 hr

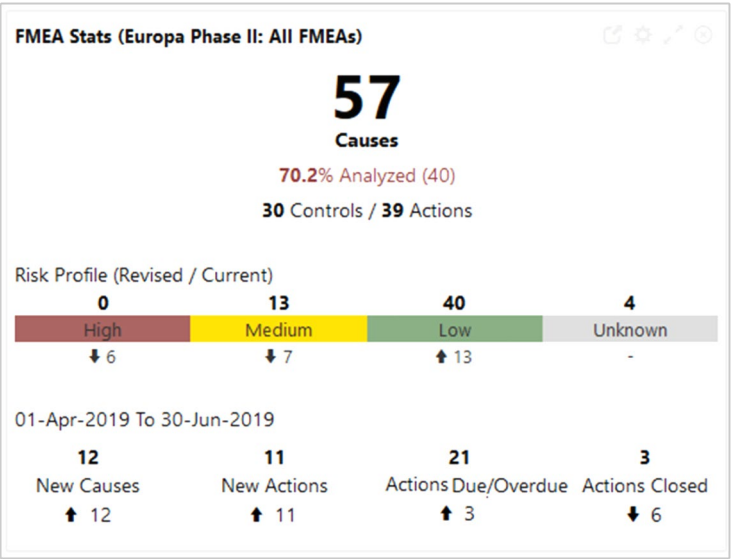
Time @ Reliability = 0.95 **1837.47 hr**
Europa Warranty Time (5/14/2018)
Project : Europa Phase II
▲ 660.11% from 241.73 hr

Published by: Jane Reliability **Published Date:** 4/16/2020 6:38:36 PM

Results Report	
Report Type	Publish SEP Summary
User Info	
Name	Jane Reliability

Track FMEA progress and share lessons learned

- Configurable dashboard tiles help to monitor potential failure causes identified via FMEAs and track progress on assigned actions that will mitigate the risk



Failure Causes Grid (Europa Phase II: All FMEAs)

Cause	Controls	RPNi	Actions	RPNr
Insufficient friction delivered by hand brake subsystem	All-Terrain braking system All-Terrain bicycle stopping	350	Develop analytical model Add rigorous tire durability	80
Tire rupturing	Bicycle system durability	343	Add tire reliability and durability	210
Brake cable misadjusted by bicycle user	Bicycle system durability	300	Revise the bicycle durability Revise the design review	40
Cable breaks	Cable material selection Bicycle system durability	240	Require cable DFMEA analysis Based on results of Cable	30
Excessive brake wear	Design review of brake Bicycle system durability	210	Redesign brake lever to	70
Wheel cross section too thin for anticipated impact load	No controls currently planned	200	Perform wheel cross section Increase wheel cross section	120
Corrosion of cable wiring due to wrong material selection	Cable material selection	200	Perform a thorough review	20

5 10 25 50 1/1 (48) < 1 >

All Actions (Europa Phase II)

Description	Status	Person Responsible	Planned Start	Planned End
Test E98745	Past Due	Liz Designer	4/2/2018	4/2/2018
Revise Bicycle system stability testing to include	Past Due	Bill Technician	3/19/2018	3/19/2018
Change pedal material to higher coefficient of friction	Past Due	Joe Engineer	3/5/2018	3/8/2018
Develop analytical model to simulate the All-Terrain	Past Due		3/5/2018	3/5/2018
Perform FEA on spring mechanism and make	Past Due	Joe Engineer	2/23/2018	3/2/2018
Add pedal feel to overall bicycle design review	Completed - L...	Joe Analyst	3/1/2018	3/1/2018
Another action that needs to be started soon.	Past Due	Jane Manager	11/20/2017	2/24/2018

5 10 25 50 1/2 (96) < 1 2 >

- Convenient web summaries help managers and others track progress for each FMEA
- Key stats and charts at-a-glance:
 - # of functions and failure causes, with % analyzed
 - Top failure causes
 - Assigned actions, with % complete
- Approve change log versions via any web-enabled device

Frame Subsystem

Lower Front Tube

Rev1
Locked

Upper Frame

Rev1
In Progress

Lower Rear Tube

Rev1
Awaiting Review

Properties FMEA Stats FMEA

FMEA Stats

All-Terrain Bicycle System

4

Functions

100% Analyzed (4)

11

Failures

100% Analyzed (11)

11

Effects

100% Analyzed (11)

27

Causes

100% Analyzed (27)

34

Controls

12

Actions

33.3% Completed (4)

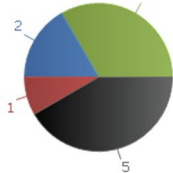
7

Sub-Item FMEAs

42.9% Analyzed(3)

Recommended Actions

Completion Status (# of actions)



Completed - 33.3 % In Progress - 16.7 %
Not Started - 41.7 % Past Due - 8.3 %

Progress (% of total duration)

18.8%

Action	Start Date	Completion Date
Status: Completed		
Status: In Progress		
Status: Not Started		
Perform FEA on spring mechanism and make required design changes to improve shock performance	11/28/2017	12/5/2017
Revise Bicycle system stability testing to include enhanced steering regimen	12/30/2017	12/30/2017
Redesign seat adjustment range to include results from marketing clinics	11/15/2017	11/17/2017
Change pedal material to higher coefficient of friction	12/5/2017	12/8/2017
Develop analytical model to simulate the All-Terrain braking system and use the model to optimize the Hand Brake design.	12/3/2017	12/3/2017
Status: Past Due		

- Colleagues throughout your organization can view the latest FMEAs without a desktop application installed
- View full properties for all FMEA records

All-Terrain Bicycle System

F

→

Frame Subsystem

F

→

Front Wheel Subsystem

F

Rear Wheel Subsystem

Sprocket-Pedal Subsystem

Chain-Derailleur Subsystem

Seat Subsystem

F

Handle Bar Subsystem

F

→

Hand Brake Subsystem

F

→

Brake Lever

→

Brake Pads

→

Brake Calliper

→

Suspension Subsystem

⚙️

Description

RPNi

RPNr

→

Function: Provide the correct level of friction between brake pad assembly and wheel rim to safely stop bicycle in the required distance, under all operating conditions.

→

Failure: Insufficient friction delivered by hand brake subsystem between brake pads and wheels during heavy rain conditions.

Grouped Effects:

Bicycle wheel does not slow down when the brake lever is pulled potentially resulting in accident. (10,-)

Causes:

→

Cable Binds due to inadequate lubrication

360

40

Actions:

Redesign hand brake cable routing to reduce friction and make system insensitive to lubrication degradation

Modify bicycle durability testing to include periodic brake cable checks for binding

Controls:

Hand Brake Design Guide #123

Bicycle system durability test # 789

→

Cable breaks

240

30

→

Function: Brake system is easy to adjust and keep in optimal working order.

→

Failure: Brake system misadjusted by bicycle user

Grouped Effects:

Brake system does not stop bicycle in required distance or is erratic, potentially resulting in accident. (10,-)

Causes:

→

Brake cable misadjusted by bicycle user

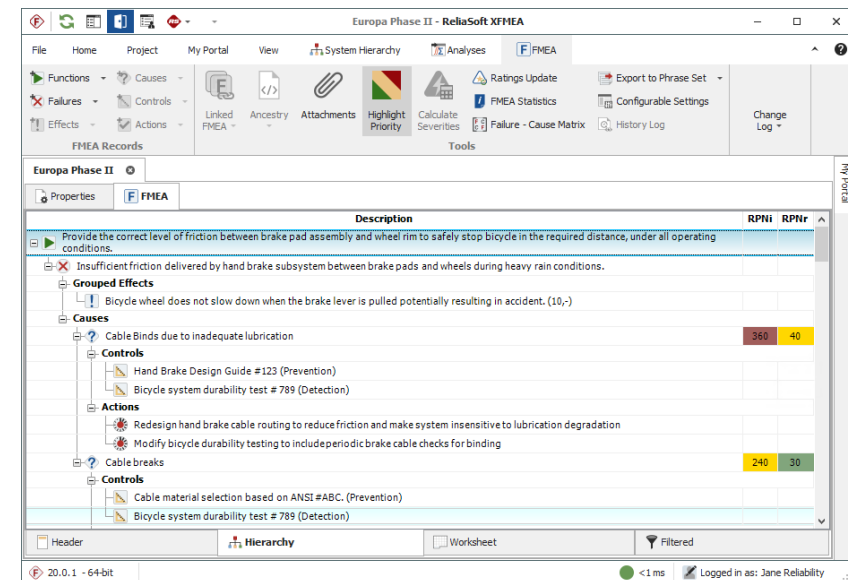
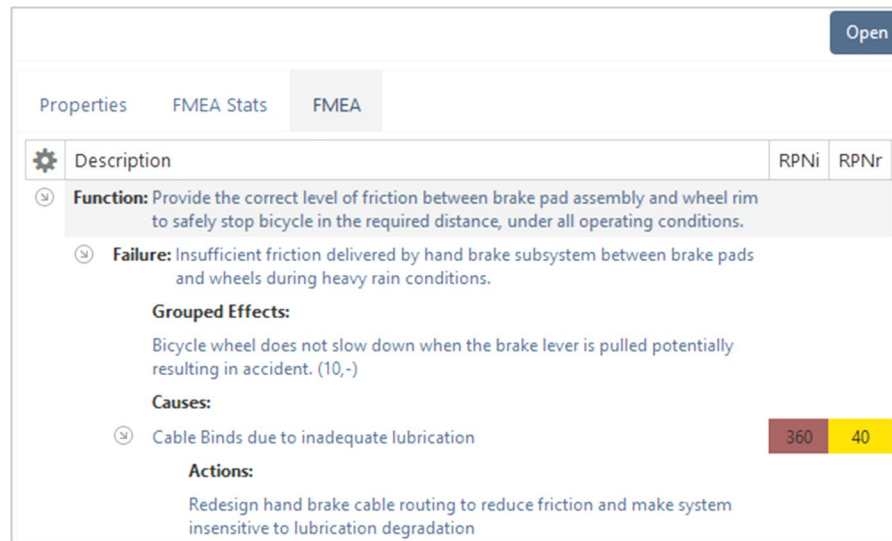
300

40

- SEP makes it easy to open the full analyses in ReliaSoft desktop applications
- If your site is configured for **Remote ReliaSoft**, users can launch the applications on a remote server without having to install and update software on each client computer

Remote ReliaSoft – Requirements

- At least one Windows server with Microsoft Remote Desktop Services (RDS)
- Sufficient RDS license seats (purchased from your preferred Microsoft vendor)
- ReliaSoft applications installed on RDS servers – token-based or floating license is recommended
- IT support to set up and maintain RDS servers



- View or download finalized report documents that are saved with the project
- View custom reports created with the desktop app’s built-in dashboard tool

Select an FMEA

Item

All-Terrain Bicycle System

Front Tire

Hand Brake Subsystem

Upper Frame

Wheel Rim

Dashboard All-Terrain Bicycle System

Initial RPN

Revised RPN

RPN

400

300

200

100

0

Handle bar misaligned

Initial RPN: 90

Revised RPN: 90

Cause Name	[RPN] Si (Max)	[RPN] Oi (Max)	[RPN] Di (Max)	[RPN] RPNi (Max)
Brake lever clamp feature bottoms out without p...	10	7	3	210
Brake lever to handle bar fastening bolt comes ...	10			
Brake lever to handle bar fastening bolt is ove...				
Brake system mis-adjusted by bicycle user	10			
Excessive brake adjustments	7			
Excessive brake wear	7			
Excessive friction with chain and sprocket	6			
Frame and pedal geometry inadequate for shorter...	6			

FMEAs: Europa Prototype

Hierarchy View

Published Reports

Dashboards

Queries

Name	Description	Type
Bike DFMEA Report_Dec2017	FMEA report generated on a particular date	
Bike Failure Modes Summary_Dec2017	Query results generated on a particular date (saved in Excel)	
Bike Failure Modes Summary_Dec2017	Query results generated on a particular date (saved in Word)	

- ▲ Queries provide enormous flexibility to get customized output based on the latest data from any FMEA, such as:
 - Actions that are incomplete
 - Effects with high severity
 - Failure causes with high risk (and no controls or actions to mitigate)
- ▲ Run saved queries via the web for any FMEA or group of FMEAs
- ▲ Download results to Excel

Saved Queries
Run a query that was saved in the desktop application - generates a table of results for the selected item(s)

Query Type

User

All

All Saved Queries

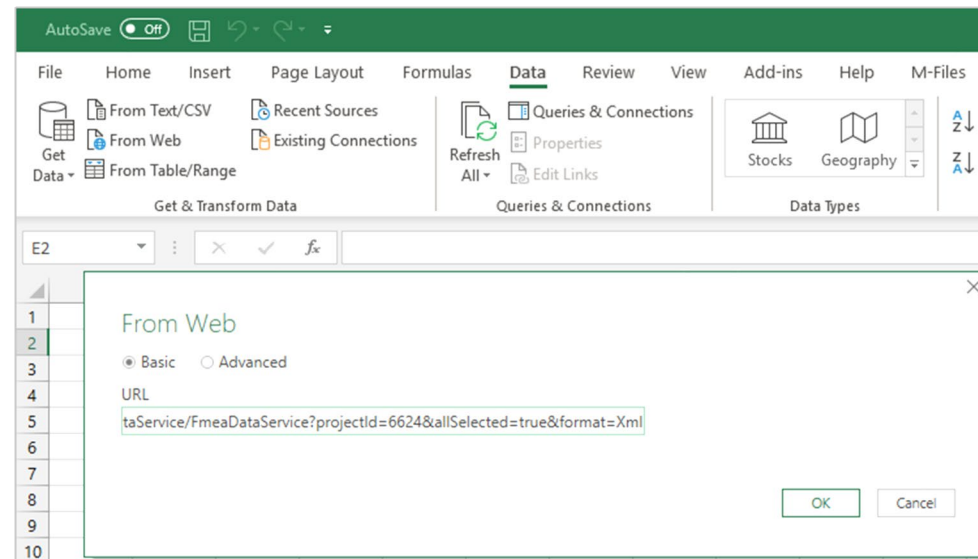
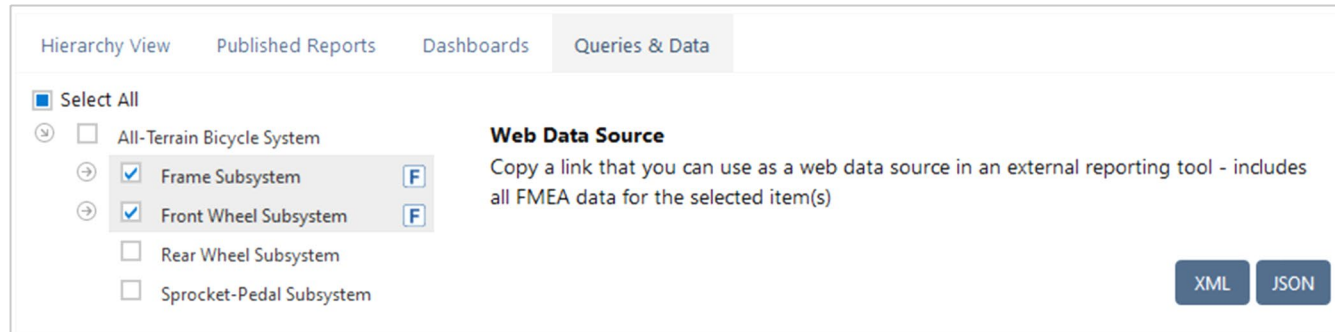
Failure Cause Summary
Summary of key details for all failure causes in an FMEA
Last Updated By Jane Reliability 4/17/2020 5:17 PM

Run

Unmitigated Failure Causes
High-risk failure causes that do not have an action or control defined
Last Updated By Jane Reliability 4/17/2020 5:17 PM

Run

- SEP offers a web service that returns all data for a selected FMEA or group of FMEAs
- If you have a specialized reporting need that is not directly supported, you can use SEP as a web data source in an external reporting tool such as Excel or Power BI



- ▲ ReliaSoft desktop applications can send alerts when an action is **created, modified** or **ready to be reviewed**
- ▲ If the service is running on the SEP web server, it can trigger additional alerts based on the **action due date**
 - Send an alert __ days before the action is due
 - Then send a reminder every __ days until the action is complete

Send action alerts based on calendar date
(if service is running)

Service Status (4:33:02 PM) Running

☒ Alert when action is due in [x] days

☒ Remind every [x] days until complete

From Address for E-mail Alerts

Action -

Action Description

Responsibility
 % Utilization
Please enter a numeric value.

Resources +

Action Resolution +

Review/Approval +

History +

Planned Timeline (1 Day) -

Planned Start Date

Planned Completion Date

Actual Timeline +

Watch
☒ Alert me on changes to this record (via portal message)

Links/Attachments +

- ▶ Utilizing FRACAS data when performing FMEAs saves time and leads to more effective risk assessment
- ▶ SEP makes it easy to view field failure reports in XFRACAS
 - Same “observed occurrences” quantities that are available in desktop applications
 - In addition, the website links to all FRACAS records that may be relevant for a part

All XFRACAS Records for This Item
✕

Assembly A

Incidents = 17 [View Report](#)

REL-1 , REL-2 , REL-3 , REL-4 , REL-5 , REL-9 , REL-10 , REL-11 , REL-25 , REL-26 ,
REL-27 , REL-28 , REL-30 , REL-31 , REL-43 , REL-44 , D-I-52

Problems = 2 [View Report](#)

D-PB-7 , D-PB-8

Failure Analyses = 1 [View Report](#)

D-FA4

⌵ Titan System
✕ F

Assembly A
✕ F

Assembly B
✕ F

Assembly C
✕ F

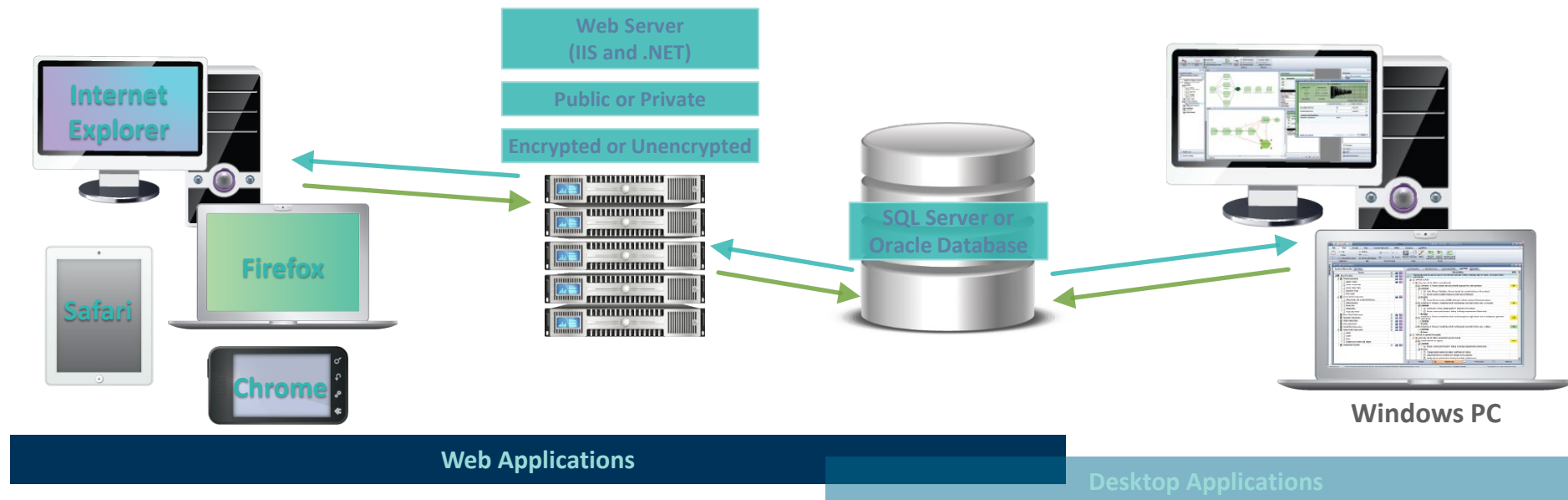
Properties
FMEA Stats
FMEA

Description	Observed Occurrences
⌵ Function: Function that Assembly A is designed to perform	
⌵ Failure: Cracking	Incidents = 2
⌵ Effect: Potential effect of the cracking	Problems = 2
Cause: Potential cause of the cracking Cause: Another potential cause of the cracking	
⌵ Failure: Cavitation	Incidents = 3
⌵ Effect: Potential effect of the cavitation	Failure Analyses = 1
Cause: Potential cause of the cavitation Cause: Another potential cause of the cavitation	



- View FMEAs across an organization using a web browser
- Track progress on completing assigned actions
- Access reliability analysis results from any web-enabled device

- ▲ A ReliaSoft enterprise repository (on Oracle or SQL Server)
 - Analysis data from any or all of the ReliaSoft applications (XFMEA, Weibull++, XFRACAS, ...)
- ▲ A Windows web server with IIS and .NET*
- ▲ IT support to:
 - set up and maintain the website
 - maintain the database and enable users to connect



* For minimum versions, please consult the latest implementation guide

Thank You

Hottinger Brüel & Kjær

Phone: +1.520.886.0410

Toll Free: 1-888-886-0410

sales@hbkworld.com

