

CERTICON



## DID YOU KNOW?

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We are saving lives of 10 000 patients wearing pacemakers with **CertiCon's** software inside!

Did you fly with Airbus A350? This model is factory assembled using software from **CertiCon**.

Patients on U.S. east coast care about their health using the mobile solution from **CertiCon**.

Every Porsche and BMW car you drive comes with a diagnostic chip from **CertiCon**.

Dispatchers on Austrian and Norwegian railways communicate via solution made by **CertiCon**.

## CERTICON MISSION

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**We build smart innovations**  
**to improve efficiency of businesses and**  
**to increase the quality of people's lives.**

# CERTICON AT GLANCE

Since 1996, CertiCon has been improving the competitiveness of our clients around the world. CertiCon's B2B solutions comprise the full spectrum of services and solutions in SW/HW development and quality-assurance verification testing. Our projects and solutions cross medical and industrial domains by leveraging state-of-the-art methodologies and technologies.



## Software Engineering

275+ Engineers



## Applied Research

20 researchers



## Product Development

4 product teams



## NATIONAL CHAMPION & TOP 10 in The Award for Innovation

EUROPEAN BUSINESS  
AWARD 2015/2016

## TOP 100 in CZECH STABILITY AWARD 2016

(AAA Excellent)

By Bisnode



# CERTICON 'S REACH

Located in the heart of Europe, CertiCon monitors the pulse of the world to provide the solutions for complex technology challenges.

80% of services exported

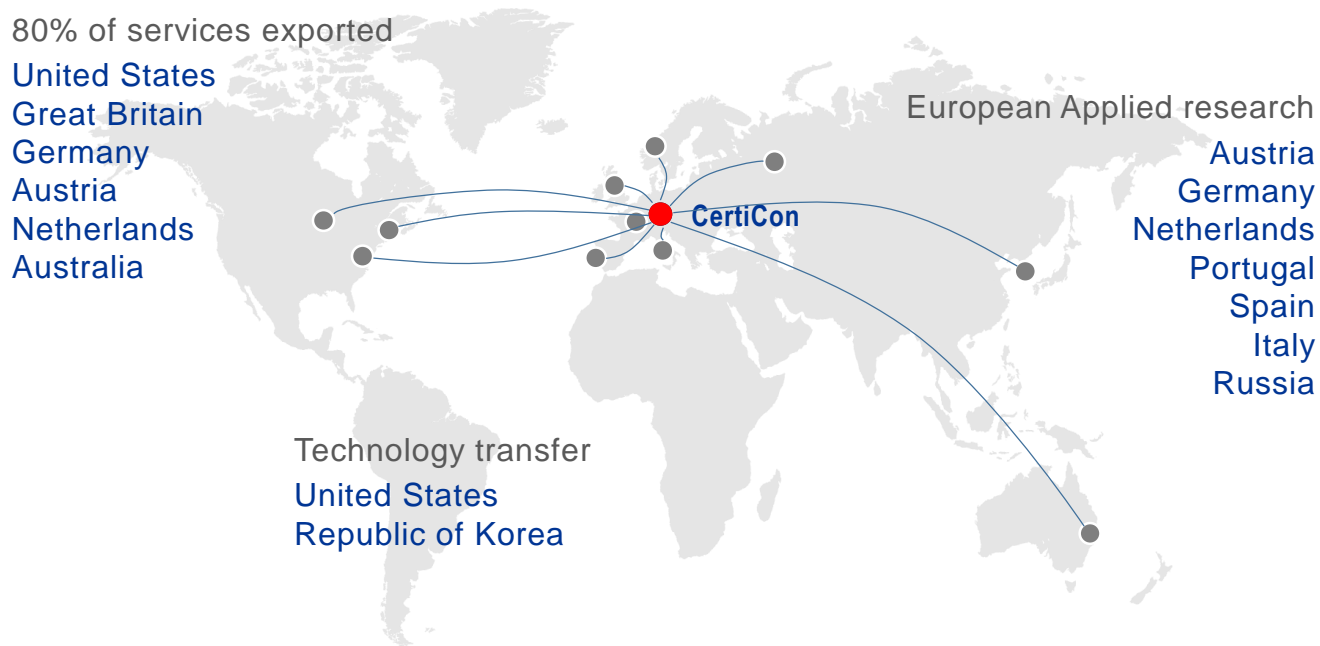
- United States
- Great Britain
- Germany
- Austria
- Netherlands
- Australia

European Applied research

- Austria
- Germany
- Netherlands
- Portugal
- Spain
- Italy
- Russia

Technology transfer

- United States
- Republic of Korea



# UNIQUENESS OF CERTICON

We can clearly see the uniqueness of CertiCon. We are not a mass production factory or a typical software-house. We are eager to solve very complex problems even in narrow market niches. This makes us different than others, we provide tailored innovations with a perfect business fit.

Expertise in cybernetics  
 90% of university graduates  
 Masters in Information  
 Technology

From Artificial Intelligence  
 to Bio-signal Processing

Connection with academia  
 Founder of research labs  
 Continuous student programs  
 Knowledge transfers to practice

And MUCH more...

Unlimited Market possibilities  
 Multi-focused on various segments  
 From healthcare to automotive  
 We deliver business to business

**WE DELIVER THE SEEMINGLY  
 IMPOSSIBLE**

Startup accelerator  
 Investments into startups  
 Health Helm, Inc. – mobile patient care  
 Passengera Ltd. – on-board infotainment  
 nova-met Ltd. – smart energy meters

# CERTICON'S STRATEGIC TECHNOLOGY AREAS

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## 1. Industry 4.0

Operational Scheduling  
 Production Planning  
 Process Optimization  
 Predictive Diagnostics  
 Multiagent Systems  
 Self-organizing Production

## 2. Smart Cities - Vision

Online Video Analysis  
 Smart Surveillance  
 Behavioral Analysis  
 Detection of Anomalies  
 Video Synopsis

## 3. Telemedicine

Electronic Prescriptions  
 Disease Management  
 Remote Patient Care  
 Treatment Governance  
 Electronic Ordering  
 Bio-signal Evaluation

**We are the endogenous **champion** with ability for **self-financing** our in-house **innovations**.**

# BRINGING INNOVATIONS TO EVERYDAY LIFE

CertiCon's mission from its foundation has been to deliver IT innovations for a better world. Where other companies fail to deliver, CertiCon pursues the opportunity. With our own applied research and product development centre, we leverage the knowledge, research methods and deliver what seems impossible.



## Academia Partnership

Prague – Pilsen – Ostrava  
 TU Vienna - CDL LAB  
 University of Cambridge  
 University of Manchester  
 University in Constance

And many more...

## Applied Research

Optimization Methods  
 Computer Vision  
 Telemedicine  
 Multi-agent Systems

## Product Development

Smart Surveillance  
 Production Optimization  
 E-health Applications  
 EEG Signal Processing  
 Remote Patient Engagement

## Industry

Healthcare  
 Automotive  
 waste RECYCLING  
 aviation  
 Public safety  
 telecommunications



# PARTNERSHIPS SUPPORTED BY INNOVATIONS

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To our partners and clients, we are more than just providers. We cover the full cycle of project development: from the initial idea, to project maintenance at the end.

Certicon key partners

HEALTHCARE: Medtronic (USA)

AUTOMOTIVE: Bosch (GER)

TELECOMMUNICATIONS:

Frequentis (AUT)

AVIATION: Airbus Industries (GER)



1. Business idea
2. Analysis
3. Architecture
4. Implementation
5. Verification
6. Maintenance
7. Customer Feedback

# CERTICON IN 2017

In the end of the last year we have celebrated 20<sup>th</sup> anniversary. During past 20 years we've built important pillars that support our passion for technology.



350+ employees in 3 branches

Prague – Pilsen – Ostrava

Moved to new headquarters

Achieved “large company” status

And MUCH more...



Certicon innovation centre

Dedicated for innovations

4 product development teams

We run Lean startup method

WITH More to come in 2016...



Industry 4.0 pioneers

Leaders in consultancy

In-house software tools

Industry optimization

product

With MORE to come in 2016...



Successful airbus project

Project defended in Oct 2015

Operative production scheduler

A350 SERIES aircraft assembly

In Cooperation with eu partners



4 revolutionary products

CertiConVis for surveillance

EPIQA (Smart Scheduler) for Industry 4.0

CyberPSG for sleep data analysis

4mulcom for cellular networks

# CERTICON'S TECHNICAL ABILITIES

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## Software and Hardware Engineering

- ✓ SW & HW development
- ✓ Rapid prototyping
- ✓ Multiplatform development
- ✓ Web-based applications
- ✓ Mobile development
  
- Java JSE, JEE, PHP, JSP, JScript
- Net C#, C++, C, WPF, WCF
- Google Web-toolkit, Hibernate
- MS Win, Linux, Unix
- iOS, Android

## Co-sourcing

- ✓ Certified SCRUM masters
- ✓ Certified PMI managers
- ✓ Agile project methods
- ✓ More than 15y experience
- ✓ Flexible resource planning
- ✓ Continuous budget control
- ✓ Shortened project cycles

## Testing & QA

- ✓ Functional testing
- ✓ Stress testing
- ✓ User acceptance testing
- ✓ Unit testing
- ✓ Exploratory testing
- ✓ Load & performance testing
- ✓ Regression testing

# CERTICON'S KEY REFERENCES



SPX



SEZNAM.CZ

cādence™ EADS



DOOSAN  
Doosan Škoda Power



LINET



ŠKODA



IBM



madison  
Connective Technologies



asekol

MBtech

FREQUENTIS

JABLONTRON  
CREATING ALARMS

## SECURITY: CERTICON CertiConVis

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Computer vision and machine learning is our passion. In 2015 we introduced our software solution called CertiConVis – a platform for intelligent video analysis.

**65%** This is how much we **reduced** false alarms from non-human factors

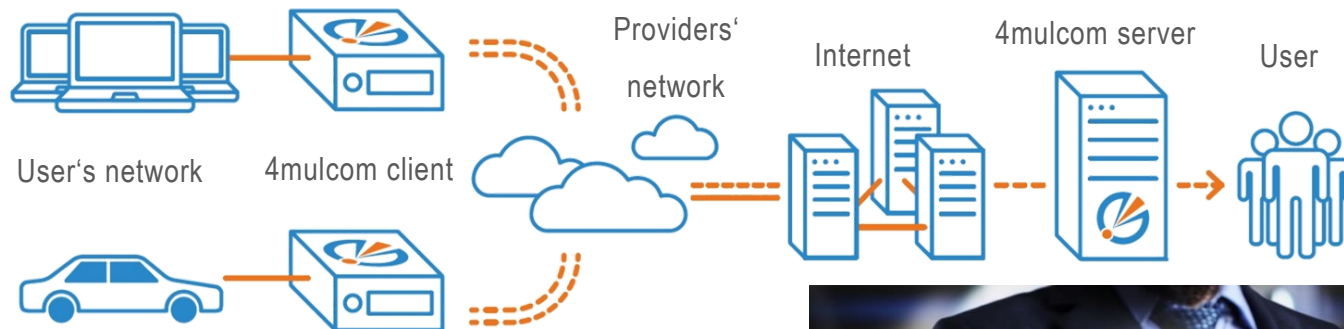
Product characteristics:

- Intelligent computer vision for image and video analysis
- Real-time and offline video stream analysis
- Rule based scene alert management
- Object and pattern recognition within images
- Server application/plugin for third-party CCTV systems



Visit: [www.certiconvis.com](http://www.certiconvis.com)

# TELECOMMUNICATION: 4mulcom - Revolutionary GSM Modem



## Product characteristics:

- Accelerates data transmission
- Stabilizes connection and bandwidth
- Improves parameters of the network from the application's perspective
- Enables HD video streams transmissions
- Uses 2 or 4 GSM channels from different operators

Visit: [4mulcomweb.certicon.cz](http://4mulcomweb.certicon.cz)



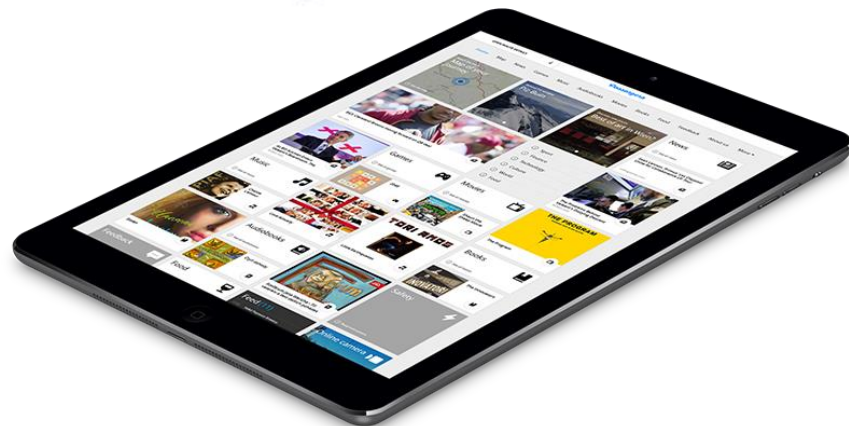
# ONBOARD ENTERTAINMENT: Focus on passenger

Passengera is all in one on-board Infotainment system with useful features related to the trip for buses, trains, planes, boats, taxis.

## Product characteristics:

- Runs on passenger smart phones, tablets and laptops as well as on fixed build-in screens
- Offline media access (movies, audio, news), POI, maps
- High speed internet access point (channel bonding)
- Runs i5 or i7 highly virtualized system
- Build-in auto recovery function

Visit: [www.passengera.com](http://www.passengera.com)



# TELEMEDICINE: Trusted Patient Coach

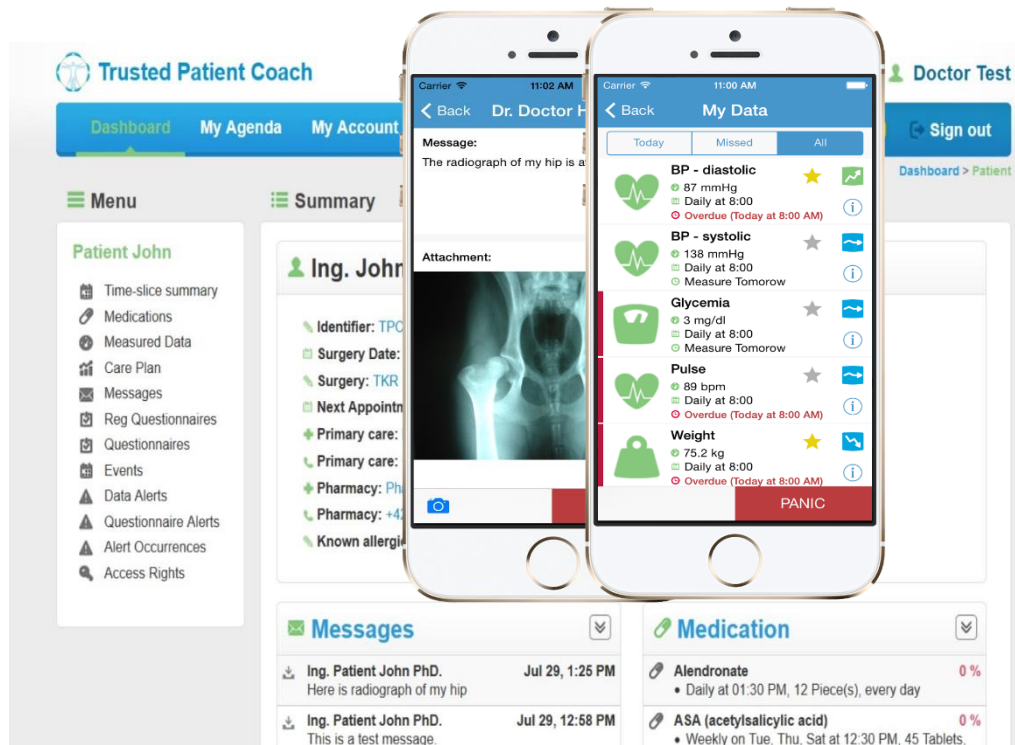
Telemedicine is the area CertiCon massively invests. We provide professional consultancy services and have developed an commercial product for remote patient/senior care – Trusted Patient Coach, officially launched in 2015.

**2x** This is how much we reduced the readmission rate of ortho patients

## Product characteristics:

- Communication link between patient-doctor
- Remote care and care-plan advisory
- Tailored care-plans and measurement plans
- Immediate notifications due to in-compliance
- Portal Information system and mobile app

Visit: [trustedpatientcoach.com](http://trustedpatientcoach.com)





# BIOSIGNAL PROCESSING: CERTICON Cyber PSG

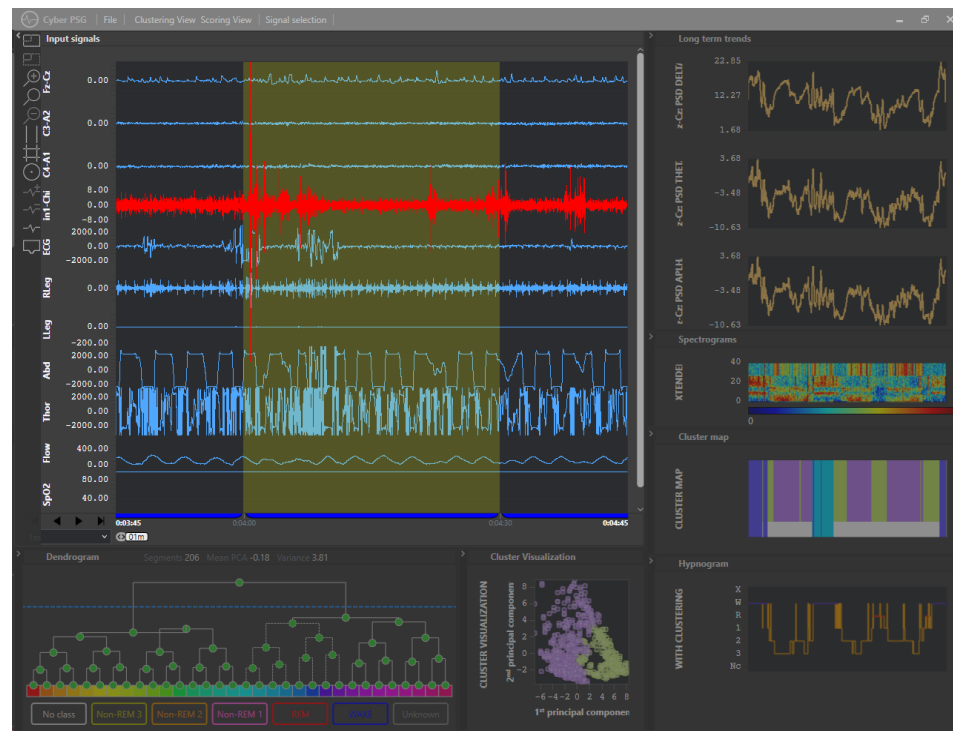
Healthcare R&D has the longest tradition in CertiCon. We create life critical software from cardiology and disease management to bio-signal processing. In 2015, we created a sophisticated solution for fast sleep data processing, CyberPSG.

**10x** faster diagnostics of sleep recordings using Cyber PSG

## Product characteristics:

- A tool for biomedical Big Data signal processing
- Optimized for objective scoring of PSG recordings
- Tailored from the EEG analysis framework made by CertiCon
- Cyber PSG is a desktop application for physicians

Visit: [cyberpsg.certicon.cz](http://cyberpsg.certicon.cz)



# INDUSTRY: CERTICON'S EPIQA (Smart Scheduler)

## Effective Planner with Intelligent Quality Accuracy

As a result of a European applied research project, CertiCon introduced the smart operational scheduler EPIQA for complex production lines management.

**15%** This is how much we **reduced**  
cost of production ramp-up  
periods

### Project characteristics:

- System for dynamic re-scheduling of production in real-time
- **ORIGINALLY** for Airbus Industries - A350 SERIES production
- Massive performance with adaptive multi-agent technology
- Especially successful in production ramp-up scheduling
- Mitigates the risk of production stoppage



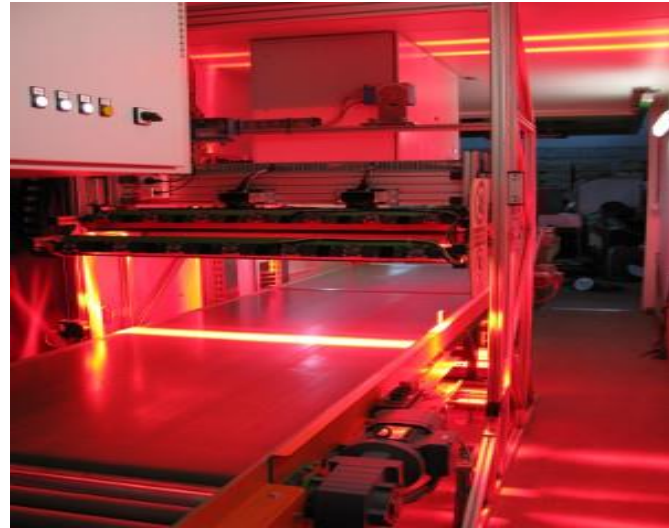
# INNOVATIONS FOR WASTE RECYCLING

CertiCon reduced the manual error rate of electro waste sorting by developing an automated identification line for the further disassembly of electronics.

**98%** This is how much the current accuracy rate has been attained

## Project characteristics:

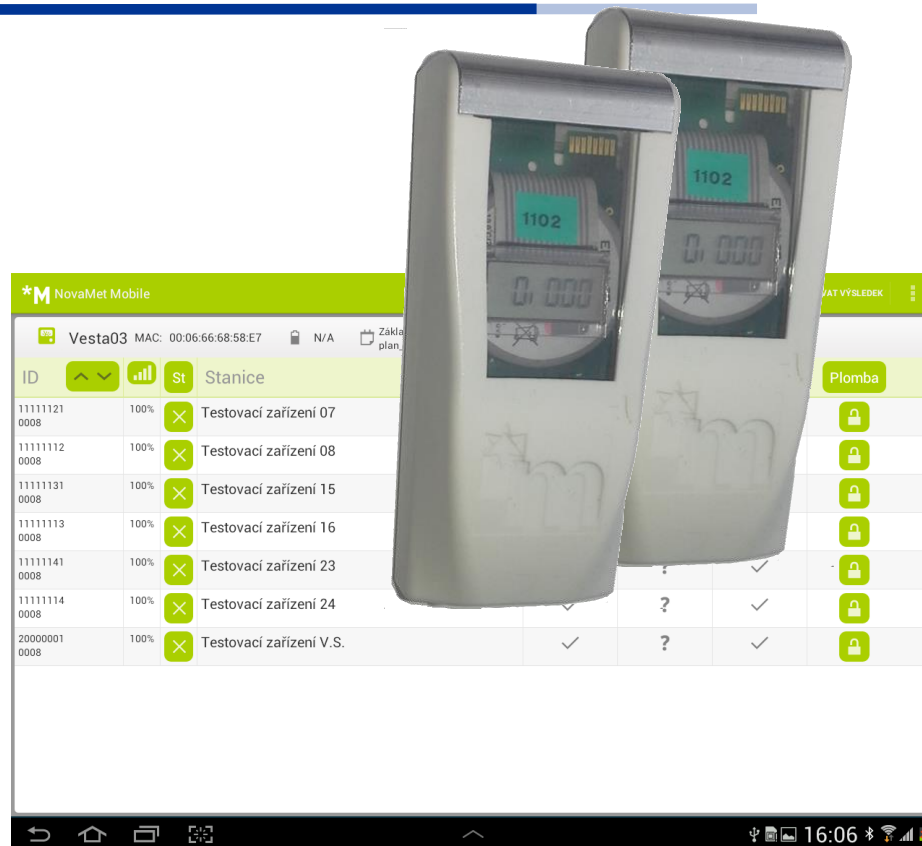
- Fully automatized line for electro-waste identification
- Identification of manufacturer's logo and product model
- Measurements and 3D modelling
- Line and HW components control (PLC, camera, sensors)
- Image processing and Computer vision solution



# HEAT COSTS MANAGEMENT SYSTEM

## Project characteristics:

- Heat Cost Allocator device
- RF Communication based on WMBus
- Configurable large set of parameters
- Battery endurance 10 years
- Android mobile app for data collection
- Web based portal for data management





Thank you for your attention



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Questions?

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