

intacs[®] – Certification Scheme since 2006

Status and Outlook

Lars Dittmann - a short self-introduction



- Degree (Diplom) in laboratory engineering from the University of Chemnitz 1990,
- Degree (Diplom) in electrical device engineering from the University of Applied Sciences Berlin 1992

Qualifications (“combining hardware, software & IT”)

- Quality Manager DIN/ISO9001 since 1993
- EOQ Auditor in 2000
- intacs® certified SPICE Principal Assessor in 2007
- Project Manager for IT operations and ITIL 2008

Experience

- QA/QM and audits according to DIN/ISO9001, VDA 6.1, VDA 6.3
- Spokesman of HIS Working Group process assessment and VDA AK 13 for Automotive SPICE®
- Founding member and Executive Board member of iNTACS e.V.
- Lead of more than 50 assessments in automotive domain since 1999
- IT service management and IT project management
- Automotive connected car services and driver assistance systems
- Cyber security in embedded automotive projects
- Moderation and coaching
- Speaker at conferences and co-author of books

Previous Positions

- 1991 – 1999
 - Manager for construction and quality for mobile cellphone infrastructure
- 1999 – 2022
 - Volkswagen AG, Auditor and Assessor, Senior Manager in various positions: QA purchasing parts, software QA, IT service management, quality analysis, connected car operations and driver assistance systems
 - 2012-2014 Senior Manager QA FAW-VW
- Since 2019 iNTACS e.V. Vice President, since 2022 Managing Director

Content

- 1 iNTACS e.V.
- 2 Certification Scheme
- 3 Results of continuous work
- 4 Challenges and Changes
- 5 Support for Software Development
- 6 Outlook



1 iNTACS e.V.

Foundation 2006

iNTACS was founded as non-profit association



1 iNTACS e.V.

Motivation – original chart 2006

intacs™ is the scheme accepted by the automotive industry, the HIS, and VDA



(“Herstellerinitiative Software“) –

Board of German OEM representatives defining software-oriented standards in the automotive domain, including the Automotive SPICE process assessment domain.



BMW Group DAIMLER



<http://www.automotive-his.de/>

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1 iNTACS e.V.

Milestones and Development

2006 iNTACS Foundation



2007 Automotive SPICE® Assessor Cert



2019 First Extension



2024 Process Expert level



1 iNTACS e.V.

Our success is based on

Voluntary work and Voluntariness

Transparency

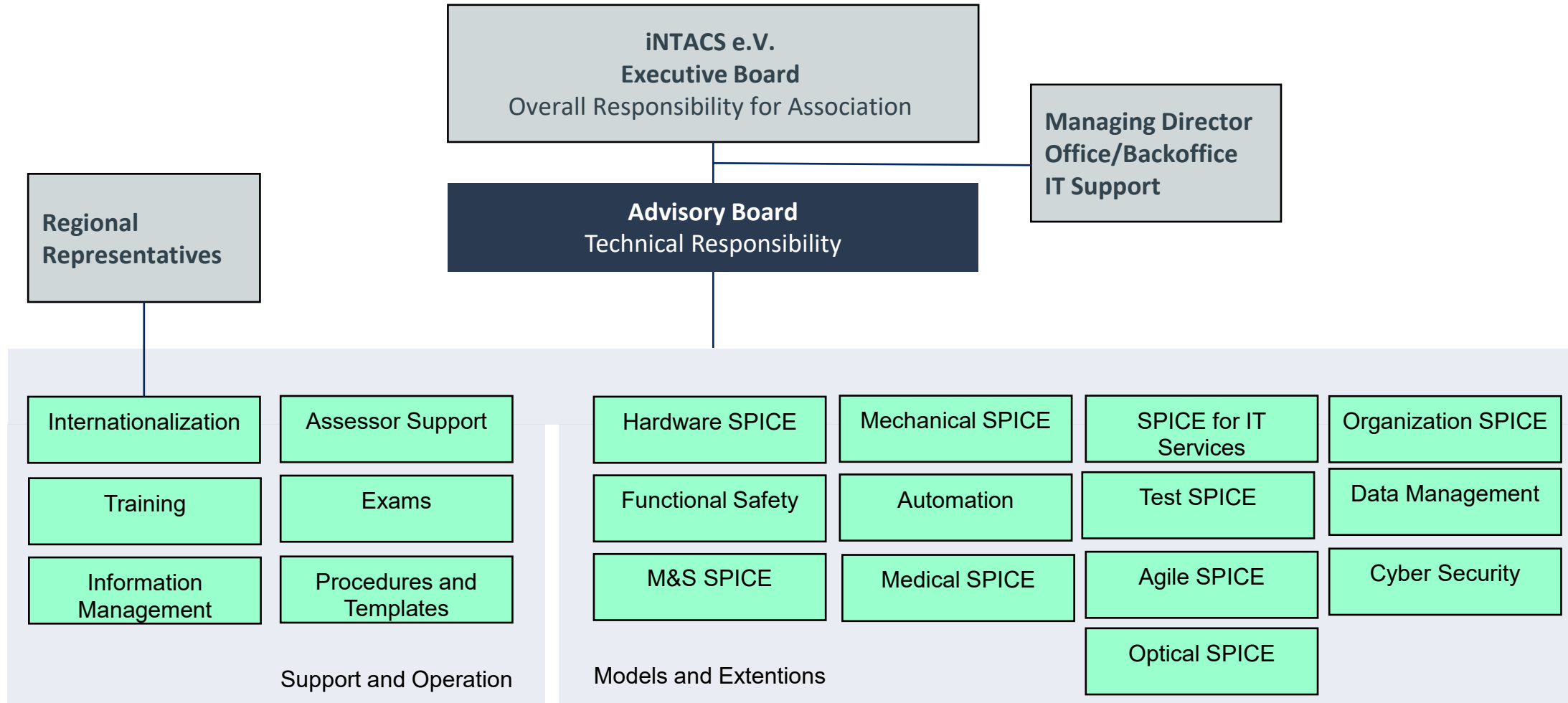
Trusted partners

Team spirit even in case of problems

We are the
automotive
industry
standard

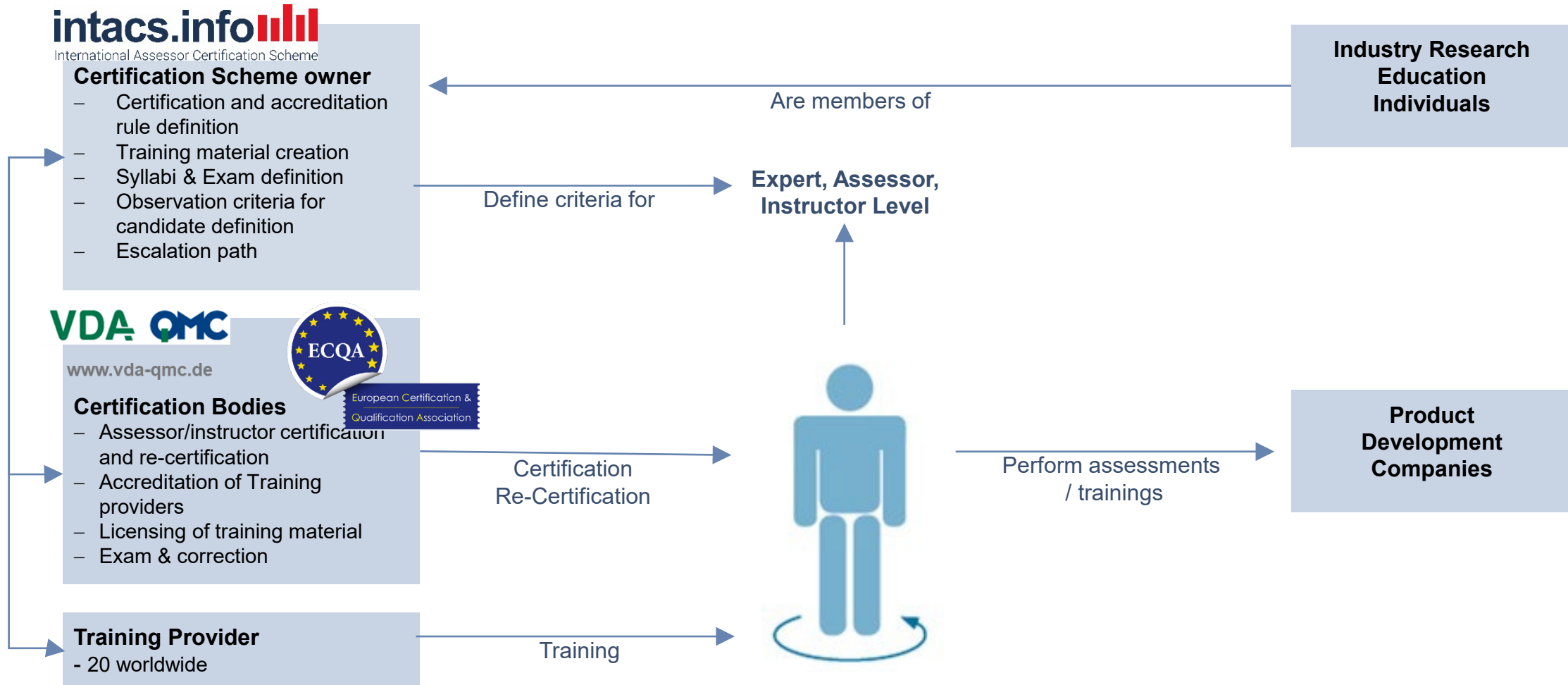
1 iNTACS e.V.

Structure of the association



2 Certification Scheme

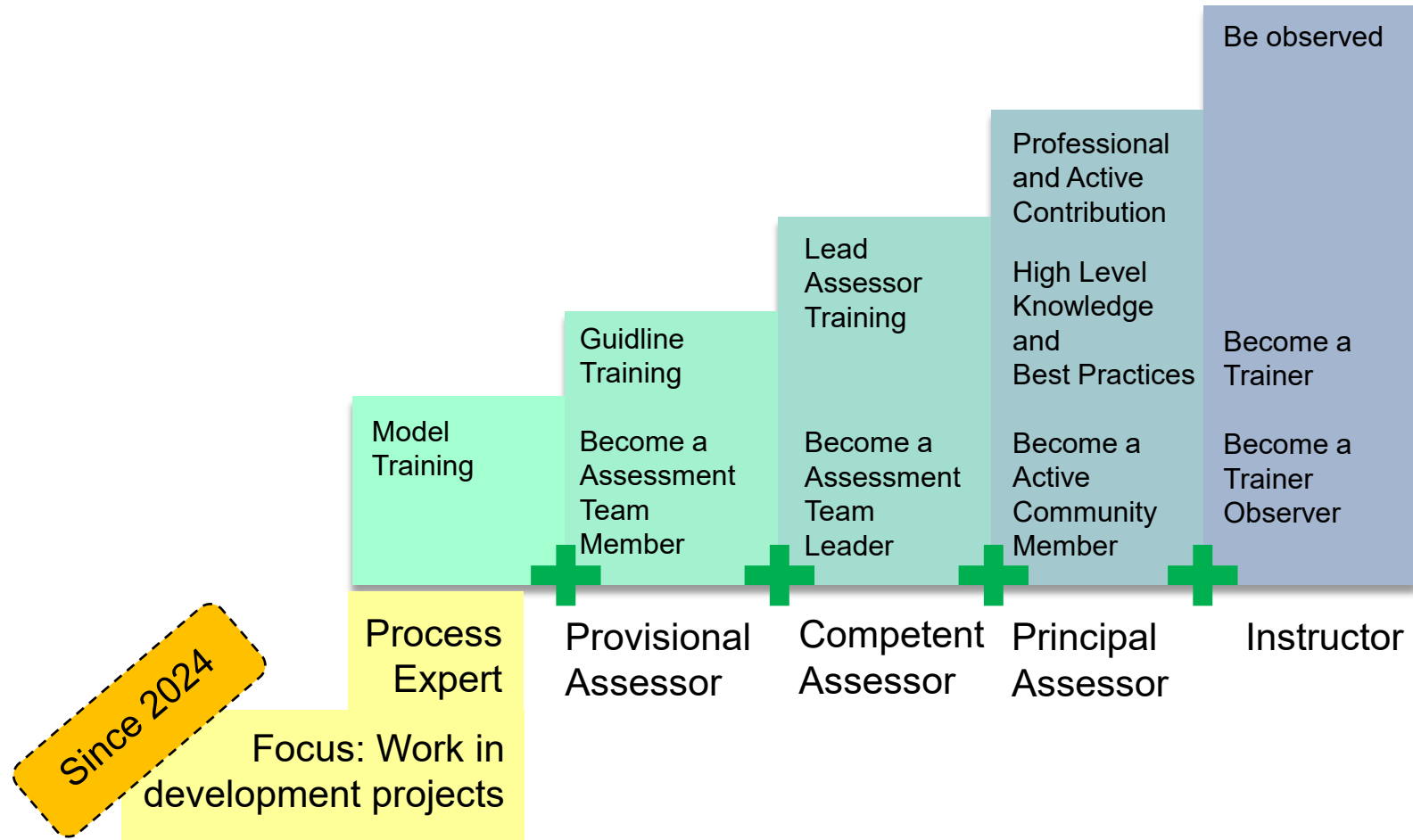
The intacs® certification scheme



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2 Certification Scheme

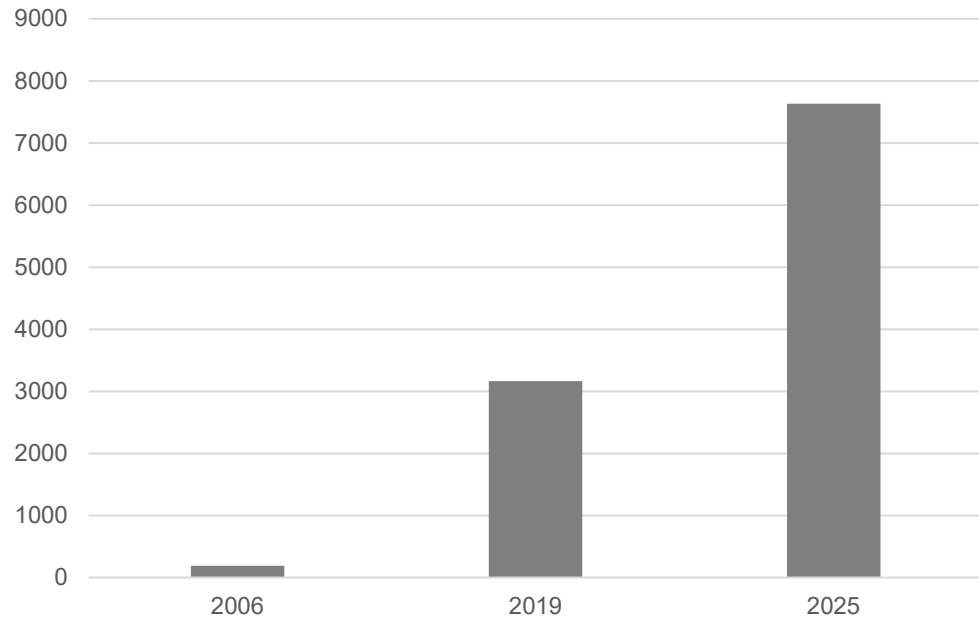
The intacs® certification level, training content and responsibilities



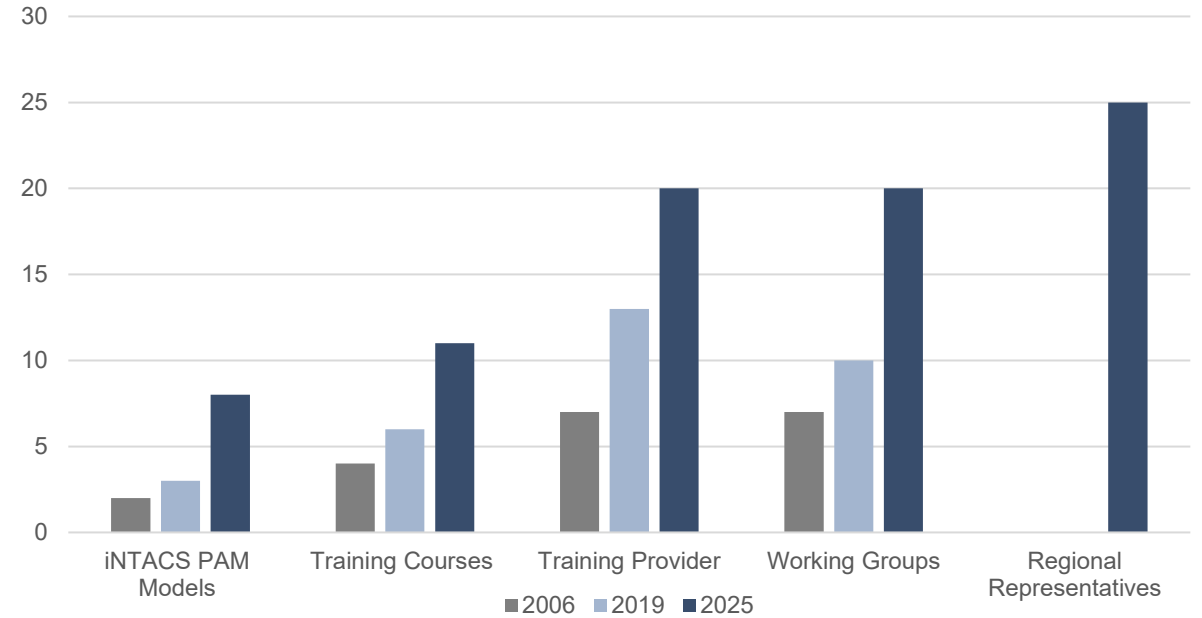
3 Results of continuous work

Facts, figures and data since 2006

Certified Assessors



Miscellaneous



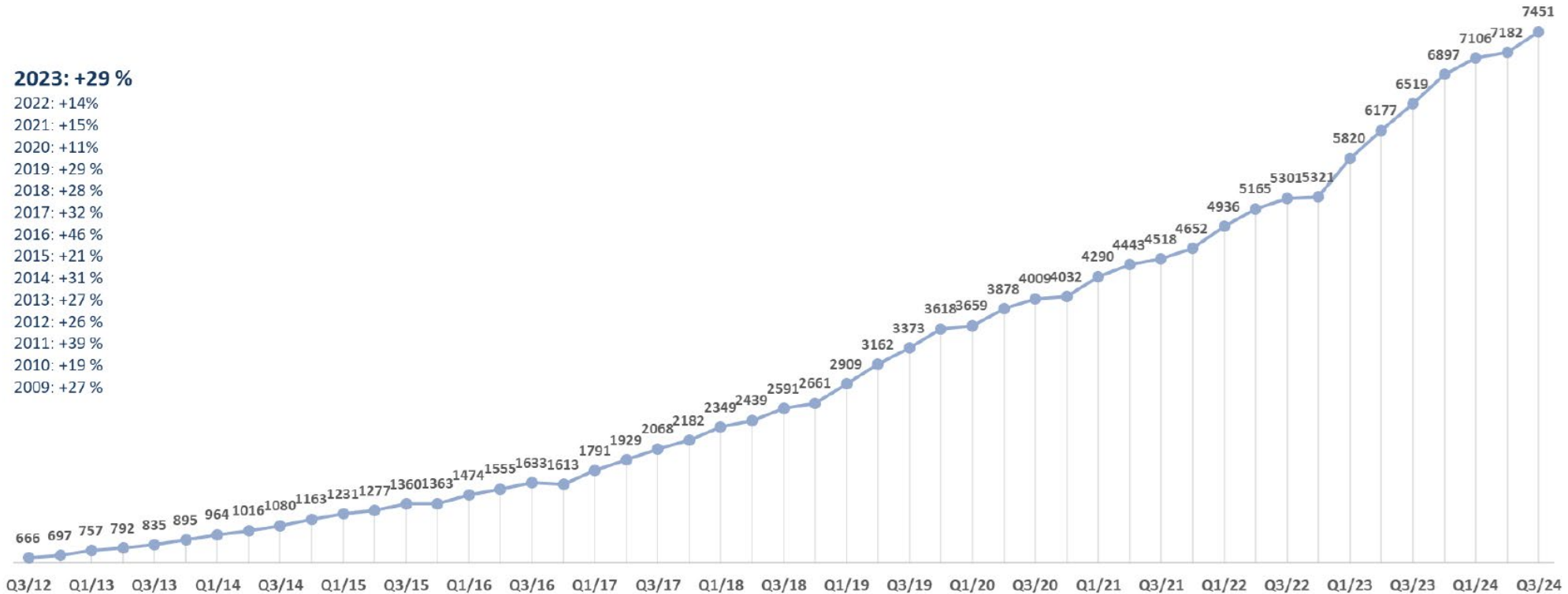
3 Results of continuous work

Details – certified assessors since 2012



www.vda-qmc.de

28.08.2024: 7451 active assessor licenses

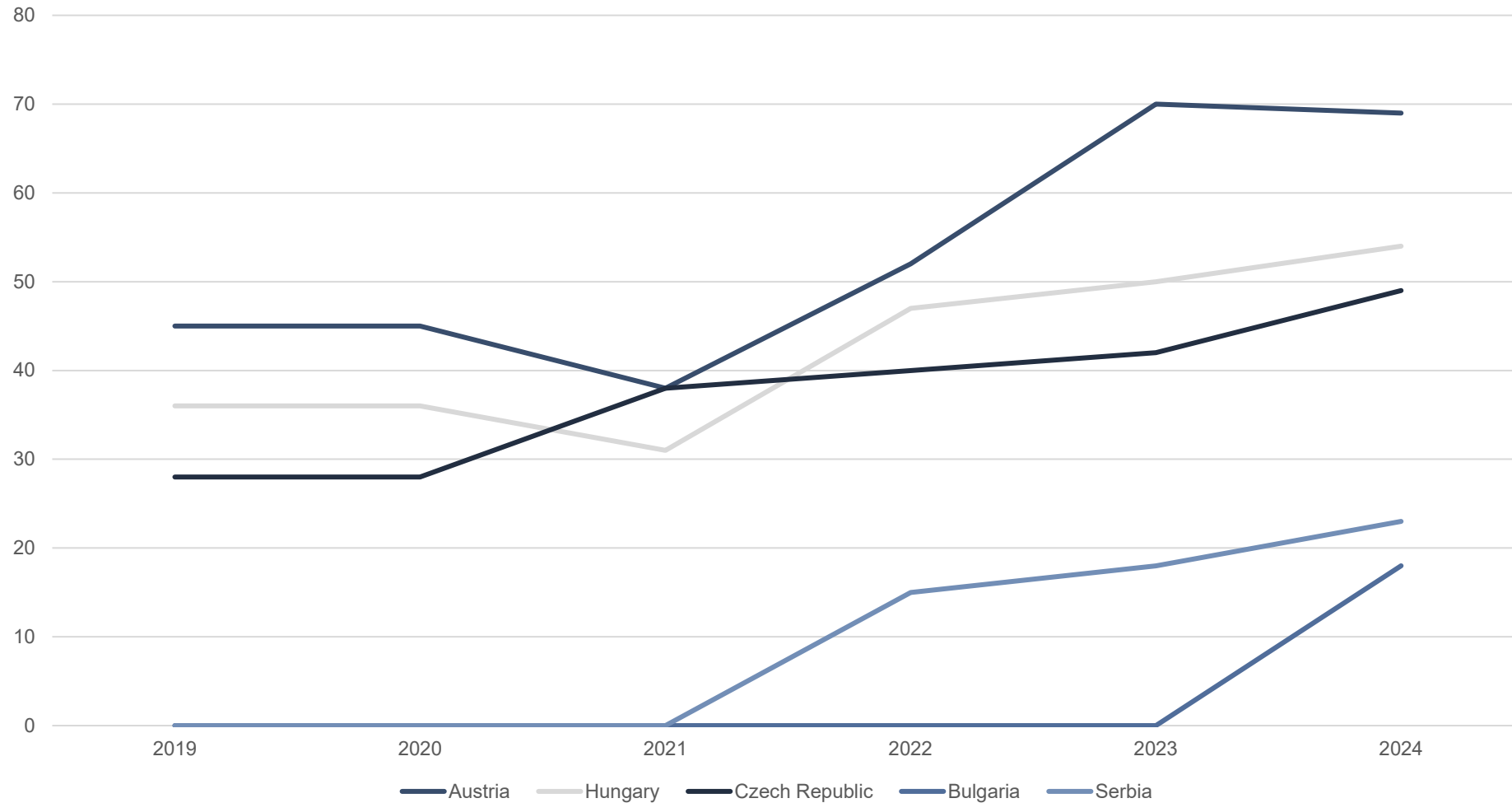


current

March 2025 – 7697 certified experts and assessors

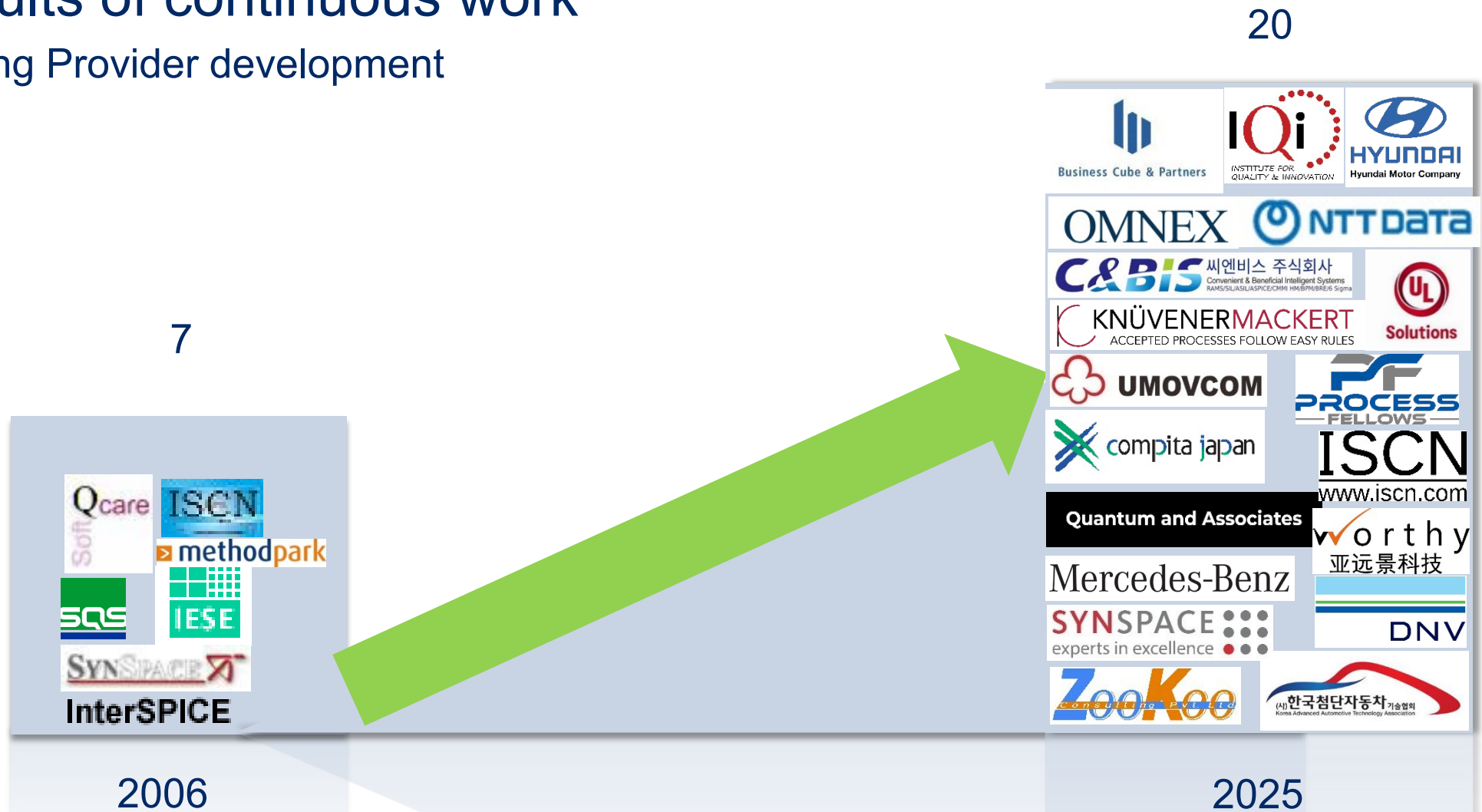
3 Results of continuous work

Development in Austria, Bulgaria, Czech Republic, Hungary and Serbia



3 Results of continuous work

Training Provider development



4 Challenges and Changes

Current trends enable new solutions in automotive industry



The automotive industry reacts to current trends partly with innovations:



Digitalisation of the value chain



Connected Services



E-mobility



Infrastructure (charging stations, pay by use)



Autonomous driving / AI



Human - machine interface

4 Challenges and Changes

NOW!

All this brings more complexity into the systems.

But why?





4 Challenges and Changes

Cycles and investments - win the competition with innovations!

The Kondratiev cycles describe the core of a theory of cyclical economic described by the Soviet economist Nikolai Kondratiev, the theory of long waves. The starting point for the long waves are paradigm shifts and the associated innovation-induced investments: Masses of investment are made in new technologies, causing an upswing. Once the innovation has become generally accepted, the associated investments are drastically reduced, and a downturn occurs.

During the downturn, however, a new paradigm is already being worked on.

Historical cycles

- 1) 1800 - Steam engine and cotton
- 2) 1850 - Railway and steel
- 3) 1900 - Electricity and chemistry
- 4) 1950 - Automotive and petrochemicals
- 5) 1975 - Computers and communication
- 6) 2008 - Internet and cloud computing
- 7) Current - AI and genetics

innovations
are
combined



Source: <https://de.wikipedia.org/wiki/Kondratjew-Zyklus>

4 Challenges and Changes

One example of combined innovations and complexity

The connection between cars and AI is necessary for Level 4, Level 5 autonomous driving. Only AI systems can make situation-dependent decisions in real time. There is hardly any innovation in Europe.



The current market leaders for autonomous driving are

1. TESLA - collects data from over 1 million vehicles worldwide
2. Waymo (Google) - collects data in cities in the USA
3. Chinese manufacturers

Whoever has the platform owns the data - an VOLKSWAGEN example

- The IT platforms and data storage were left to the big tech companies (non-EU).
- Until the 20th Volkswagen had 4 locations with IT data centres in Wolfsburg, for example, two of them has been closed. The data for Car-Net and autonomous driving is currently processed on external platforms, e.g. at Microsoft, Amazon and Mobile Eye.



Consequence

- Data storage must be purchased externally. Do you still have control over your data?

4 Challenges and Changes

We have been carrying out assessments for 20 years. Have we been successful?



Do we need a new focus, new goals?

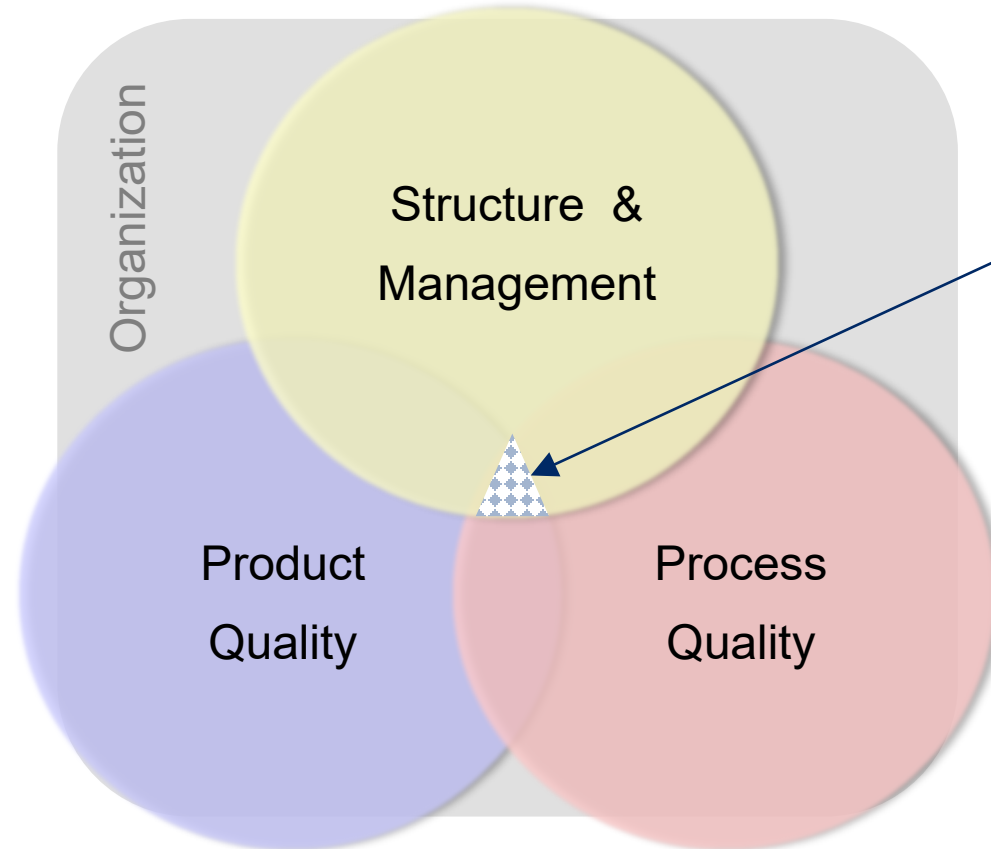
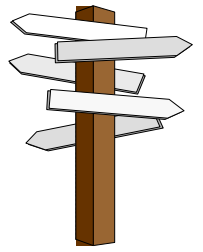


2 x YES!

But let's focus to software

5 Support for Software Development

A quality basic statement



The optimum is achieved where all areas are well-developed and managed

5 Support for Software Development

More details

Core statements for quality based on Automotive SPICE®:

- The success of the project is decided at the start. (MAN.3)
- Each organisation must define and adhere to its own quality objectives. (SUP.1)
- All planning and activities must be actively interlinked. (MAN.3, 5, 6)
- Quality Assurance must take place over the entire life cycle. (SWE.4, 5, SYS.4, 5, SUP.1, VAL.1)

Topics for the management:

- Quality in projects should be ensured with own resources.
- Planning must also cover the value chain. Interdisciplinary co-operation is necessary and must be promoted.
- Separation of Quality Assurance in Technical Development is counterproductive. However, Quality Assurance must be objective and independent.
- The overall quality results from: process quality, product quality, adherence of milestones and competitive costs – based on functional management.

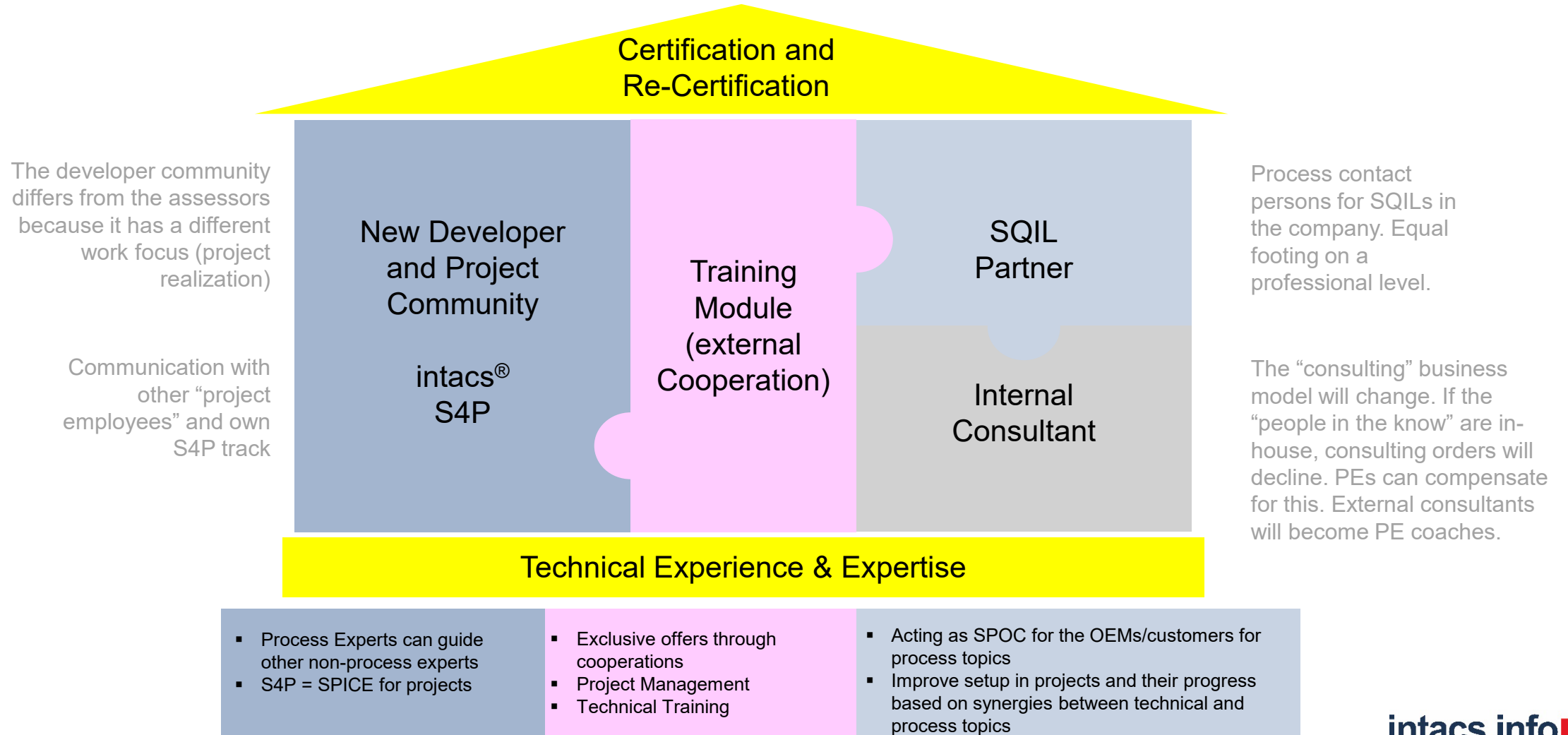
5 Support for Software Development

More ideas for better quality



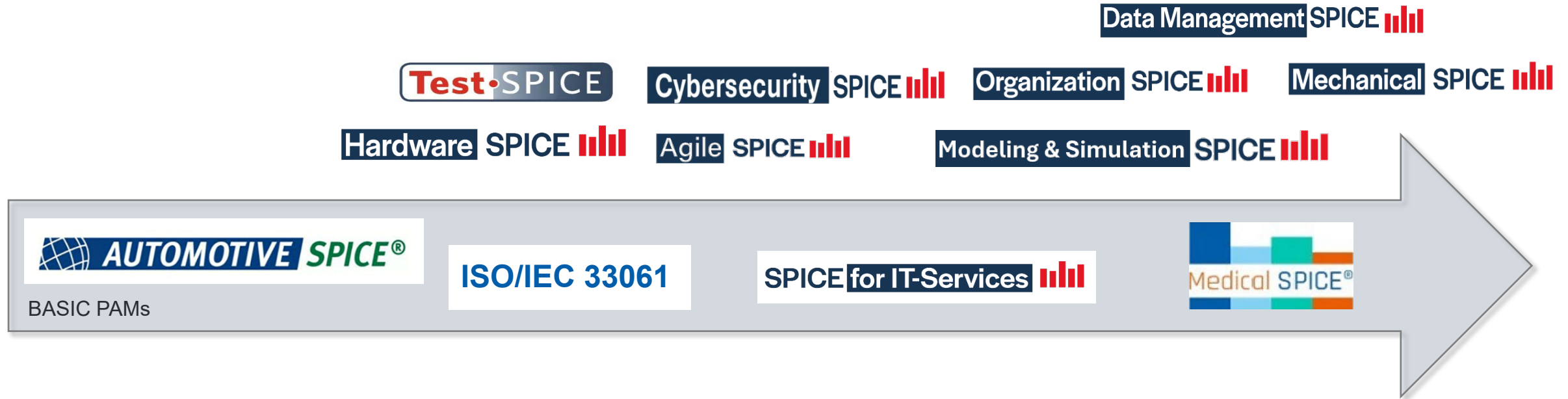
5 Support for Software Development

Topic 1: iNTACS develop the Process Expert level further



5 Support for Software Development

Topic 2: iNTACS supports model / extensions development

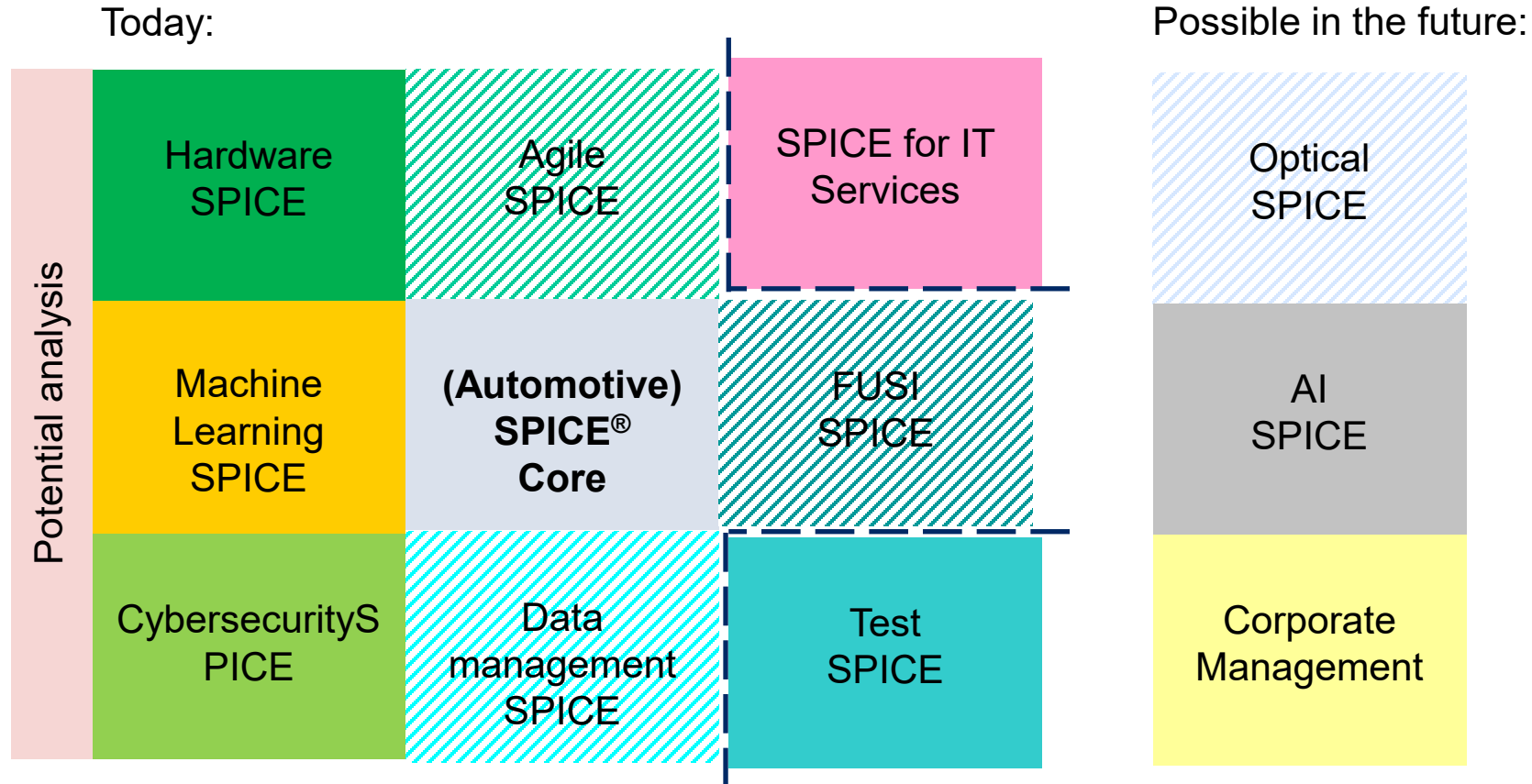


Extensions under development:

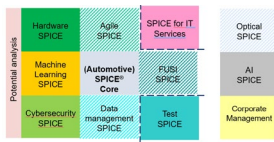
- Functional Safety SPICE
- Software Automation SPICE
- Optical SPICE

5 Support for Software Development

Topic 3: iNTACS supports an integrated model

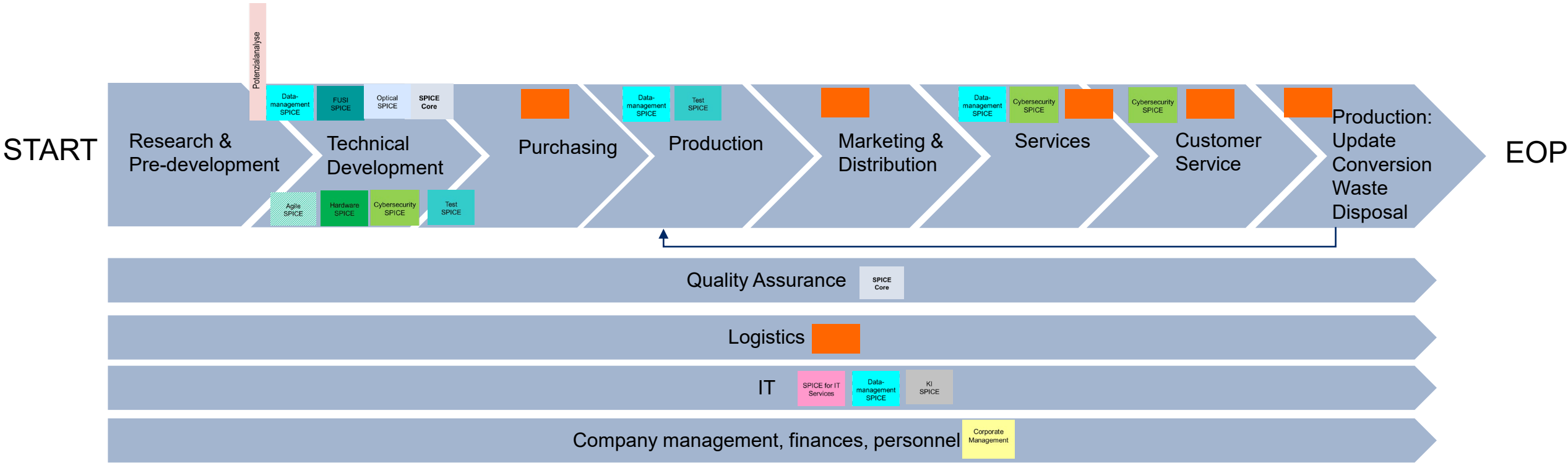


**The separation at domain borders must be overcome!
(e.g. between embedded and IT domain)**



5 Support for Software Development

Topic 4: an integrated model along the value chain (schematic)



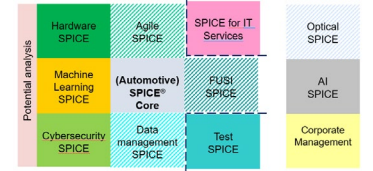
Possible gaps / missing interfaces to other models: ■

Your chance

for a contribution

Become an active part of the community!

6 Outlook



- SPICE / Automotive SPICE® can overcome the borders of system and software development.
- More content, interfaces and continuing cooperation is necessary.
- You are invited to join iNTACS to work on these topics!
- iNTACS currently supports the industry through 20 Working Groups.
- You can set standards as part of the iNTACS community!
- Your commitment pays off - e.g., during recertification through getting EE's.



6 Outlook

Additional topic - ISO/IEC 33061 issues 2025



- As Automotive SPICE® assessor with ISO/IEC 15504 tag you have the chance to transfer it to an ISO/IEC 33061 certification
- Join the 2- days training (no exam!)
- Apply for it to the ECQA
- Pay the certification fee and get 50 % discount (only 2025)
- Get your license for 3 years with all your associated tags



intacs.info
International Assessor Certification Scheme

**Your contact:
office@intacs.info**



DO YOU HAVE ANY QUESTIONS?

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