



FINANCIAL STABILITY INSTITUTE

BANK FOR INTERNATIONAL SETTLEMENTS



DEUTSCHE
BUNDESBANK

Supervising Operational Risk Management and Capital Allocation Practices in Banks

Current Work on Approving and Validating AMAs in Germany

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Banking and Financial Supervision

Deutsche Bundesbank

FSI, Basel, 24-26 October 2006

Agenda



- **Overview of German banks and regulators**
- **Basel II in Germany in general**
- **Setting up the audit framework**
- **Approval of the approaches**



Agenda



- **Overview of German banks and regulators**

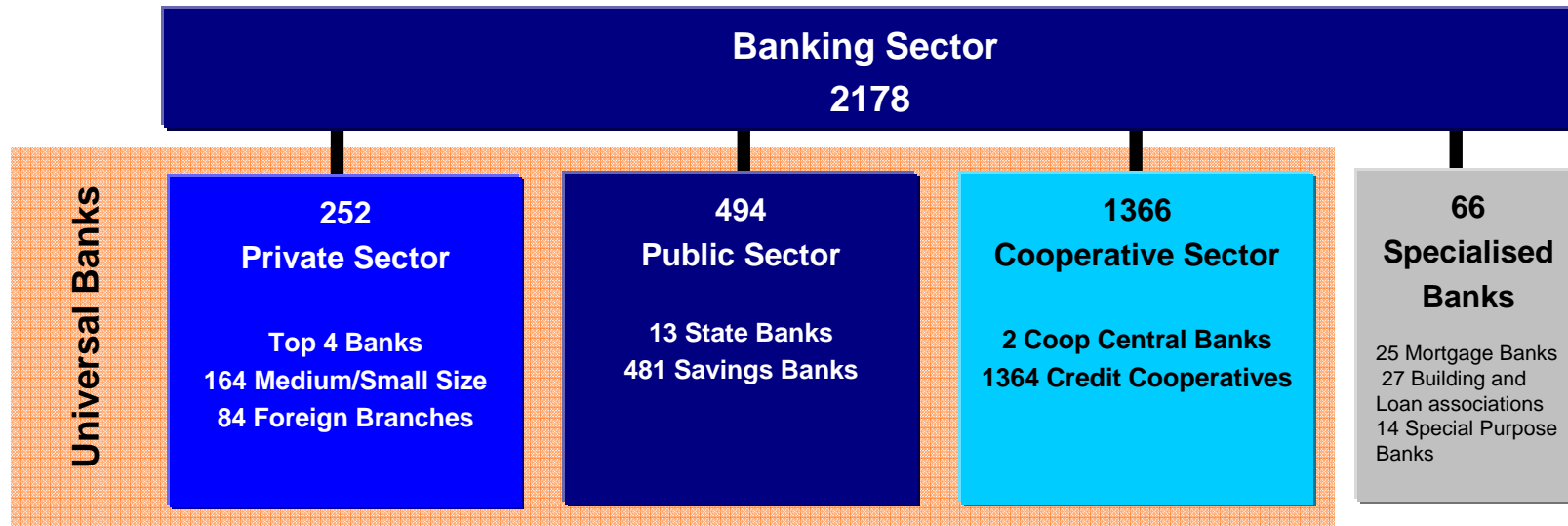
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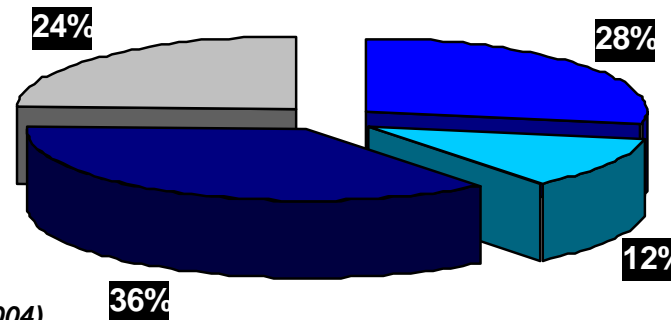


The German banking industry is segmented into four main sectors



Included are 126 foreign banks (84 branches and 42 subsidiaries)

Volume of Business
(Balance Sheet in €Bn.)

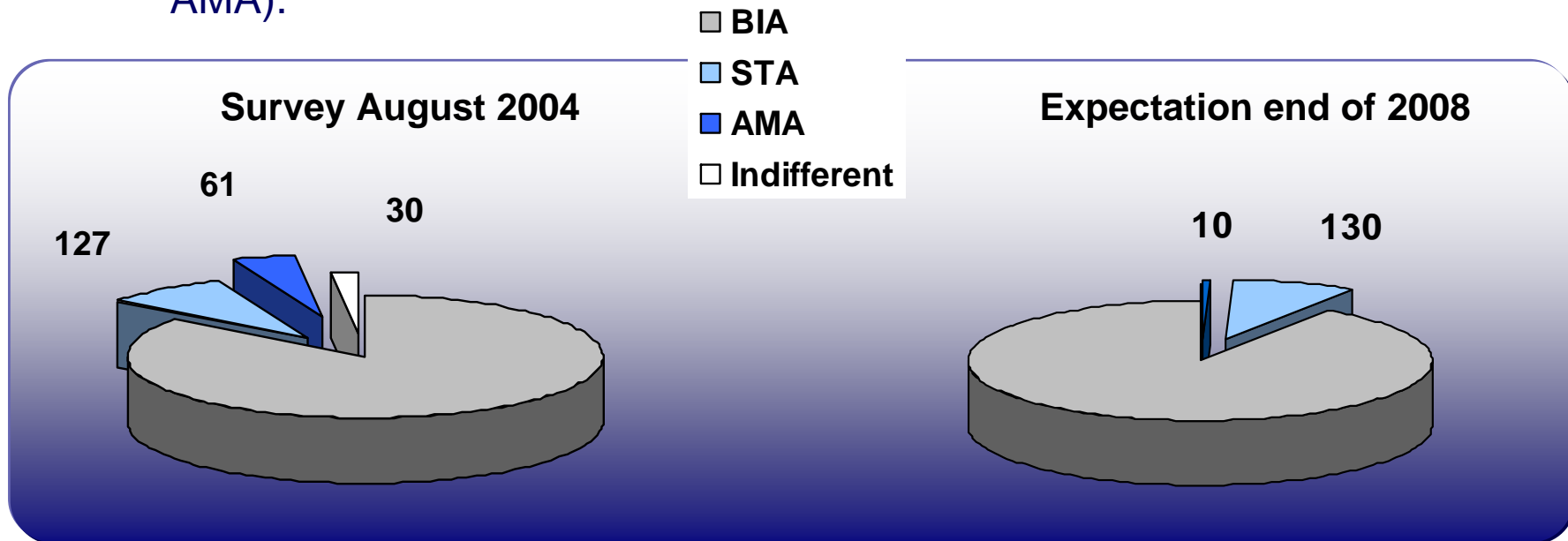


Resource: Bundesbank Monthly Report Nov. 2004 (as of August 2004)



To provide a level playing field Basel II will be implemented for all banks

- All approaches of Basel II will be available for all banks (BIA, STA, ASA, AMA).



- Reasons for this change?



The Regulation and Supervision of Institutions is stipulated in the Banking Act as of April 2004



Part I: General Provisions

- Sec. 6: Functions of BaFin
- Sec. 7: Cooperation with BBK



Part II: Provisions for Institutions

- Sec. 10: Provisions with Own Funds
- Sec. 25a: Organisational Duties

Part III: Provisions on the Supervision

- Div. 1: License to Conduct Business
- Div. 2: Protection of designations
- Div. 3: Information and Audits



Banking Supervision is carried out in cooperation between Bundesbank and Federal Financial Supervisory Authority



Sec. 6: Functions of BaFin



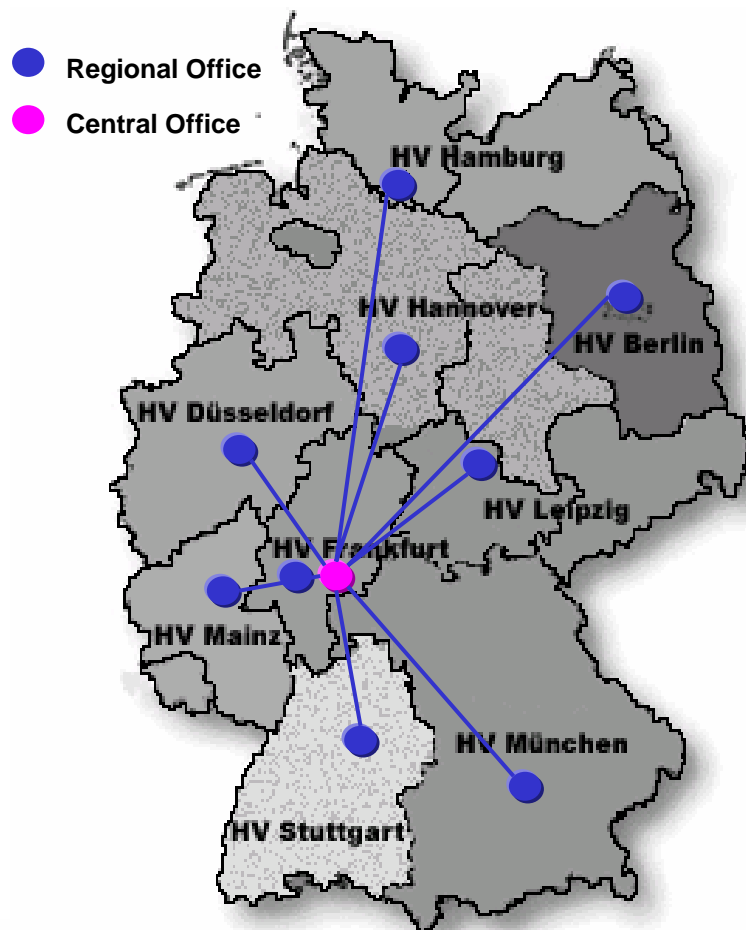
- Integrated Supervision of Financial Services: Banking, Insurance, Securities Markets
- Legal acts, licensing, monitoring and closing individual institutions.
- Issuing principles and regulations in agreement with the Bundesbank

Sec. 7: Cooperation with BBK



- The Bundesbank is assigned most of the operational tasks in banking supervision
- Ongoing monitoring process
- Regular audits of banking operations.
- Routine and ad hoc prudential discussions with the institutions

The Bundesbank has a decentralized structure with nine offices in the region



Owing to its local presence in the region, the Bundesbank has close relationships and deep insights into the financial sector and its credit institutions.

Central Office:

- General work and research, Ongoing Supervision at system relevant banks, IT Support.

Regional Offices:

- Ongoing Supervision of banks in the region, Examiner Pools

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The OpRisk Rules of Basel II will be implemented in Sec. 10 and 25a of the Banking Act



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- **Sec. 10: Provisions with Own Funds**
- **Sec. 25a: Organisational Duties**

Part III: Provisions on the Supervision

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The Banking Act is supplemented by special regulations such as the Principle I and Minimum Requirements

Sec. 10: Provisions with Own Funds

• Principle I Regulation:

- Standard Credit Risk Approach
- Standard Market Risk Approaches
- Internal Market Risk Models

Basel II
Pillar 1

Solvability Regulation

Basel II CreditRisk
Basel II Operational Risk
Standard and Internal Market Risk

Sec. 25a: Organisational Duties

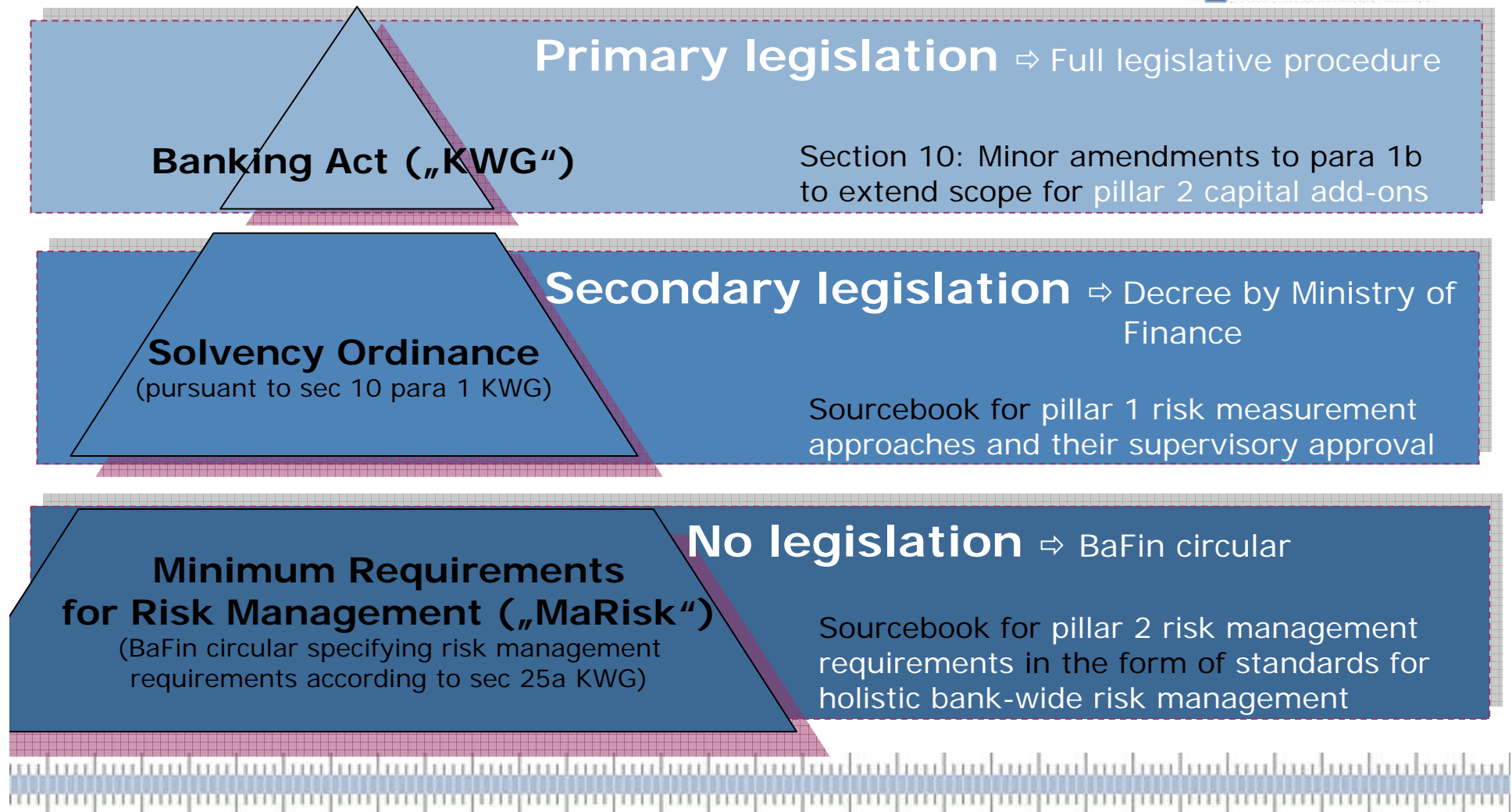
- MaH - Minimum Requirements for Trading Activities
- MaK - Minimum Requirements for Credit Business
- Circular on Outsourcing

Basel II
(Pillar 2)

Minimum Requirements for Risk Management

(including Sound Practices)

Basel 2 regulatory work



Basel II Legal timeframe



Banking Act: Discussion in Bundestag (German parliament) began in February 2006, finalisation by end of this year

Solvency Ordinance: 2nd draft (formal) consultation 31.03.- 14.07.06

- explanatory notes on OpRisk being discussed with industry specialists

MaRisk: published end 2005, now integration of outsourcing requirements

- English version available on BaFin homepage
- Section on Operational Risk based on Sound Practices has been included
- Minimum requirements on Operational Risk Management for all institutions, principle of (double) proportionality holds



Solvency Ordinance



- **Implements CRD and CEBS Guidelines**
- **principles-based -> not more detailed than directive text**
- **explanatory notes explain requirements in detail**
- **explanatory notes are work in progress and can be updated to solve specific implementation issues**
- **„recommendations“ being approved with industry group form basis of explanatory notes**



MaRisk OpRisk section Overview (I)



Five major principles:

- **The credit institution has to introduce appropriate measures to account for operational risks.**
- **Care has to be taken to ensure that material operational risks are identified and assessed at least once a year.**
- **Major losses are to be analyzed immediately with regard to their causes.**



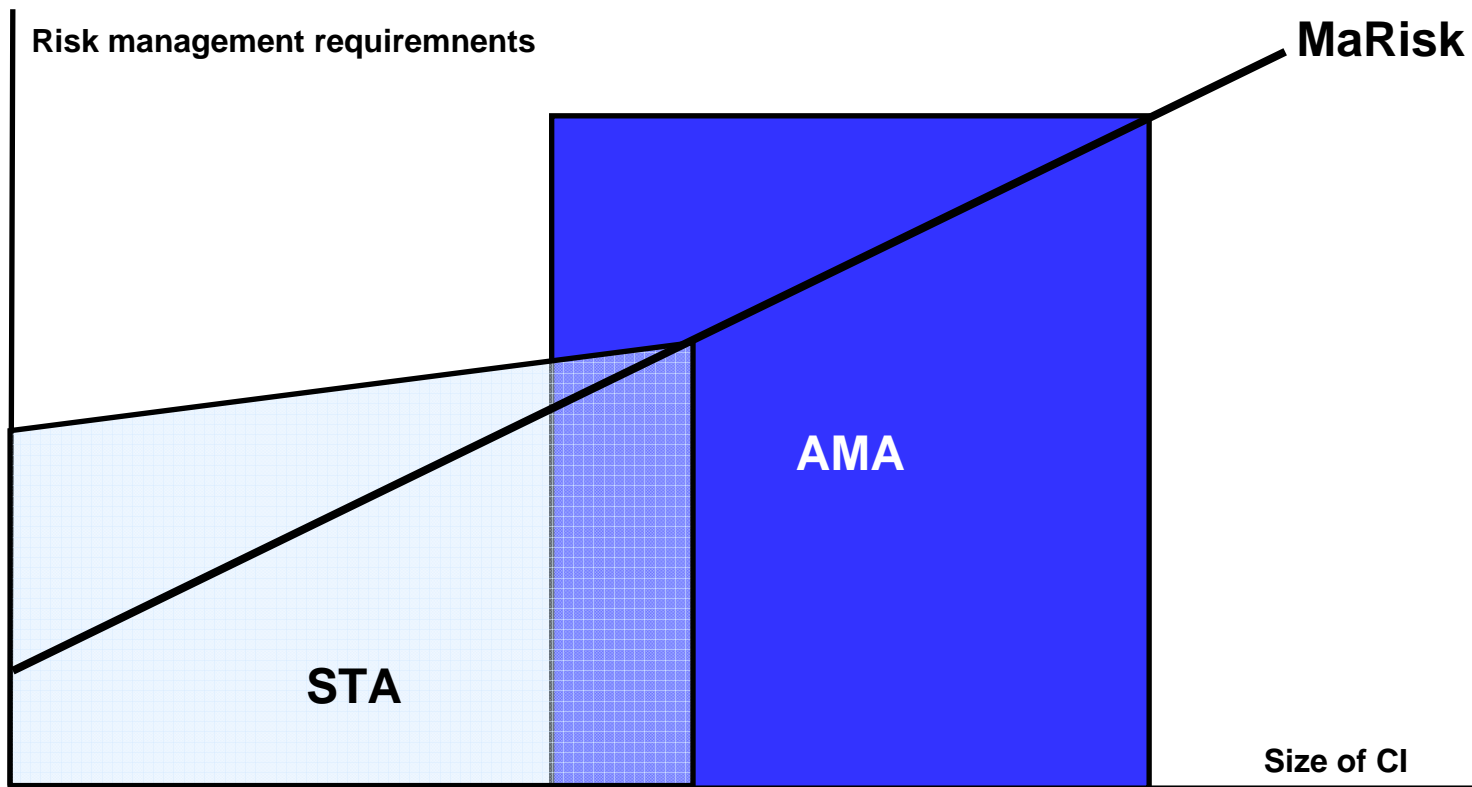
MaRisk OpRisk section Overview (II)



- **A report on major losses and material operational risks has to be provided to the management at least once a year. This report has to include the type of loss or risk, the causes, the scope of the loss or risk and, where appropriate, any countermeasures which have been introduced.**
- **The report is to be used as the basis for decisions as to whether measures have to be taken to remedy the causes, and, if so, which measures, or which risk measurement measures (e.g. insurance policies, alternative procedures, reorientation of business activities, catastrophe protection measures). The implementation of these measures has to be monitored.**



Proportionality



Agenda

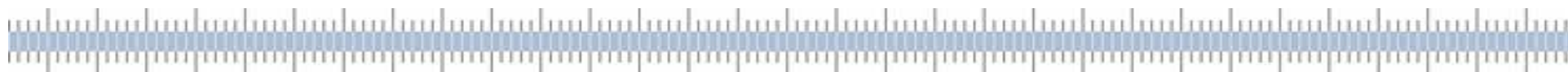
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The implementation of the OR rules raises many challenges to banking supervisors



- OR Measurement - a new frontier
- No general accepted standards available yet
- Dynamic development of AMA models and OR management Procedures
- Banks and Examiners do not have much experience with OR quantification and management procedures
- The Basel Framework does not prescribe a particular measurement approach (AMA) for quantifying operational risk
- Not very detailed evaluation criteria in Basel II and EU-Directive
- For international banks convergence of rules is necessary



How do we cope with these challenges?



Consultation with the industry

- Industry visits and implementation talks
- Industry working group
- Industry study

Regulatory work

- Analyzing the rules text (Basel II/EU-CAD) regarding approval criteria's and setting up a comprehensive Rules Repository and SRP audit staff training programs
- Defining examination principles and guidelines
- Setting up approval processes and procedures
- Development of Examination Software and Assessment Systems

International work

- Convergence: AIG and CEBS Sub Workstreams Operational Risk
- Bilaterals, e. g. with Unicredito, Citigroup or SEB Bank



The Industry Working Group



The Group includes representatives of BBK and BaFin and associations of the banking industry participating in the Central Credit Committee.

Specialist Sub-Committees:

They draw up proposals for tackling technical issues and evaluations of the implications of alternative approaches.

Experts from the banking industry, BaFin and the Bundesbank.

The proposals are discussed and examined in a wider context in the superordinated working group.

The recommendations of the group are posted on BaFin's and the Bundesbank's websites in order to ensure optimum transparency.



Recent issues of the OpRisk sub-committee

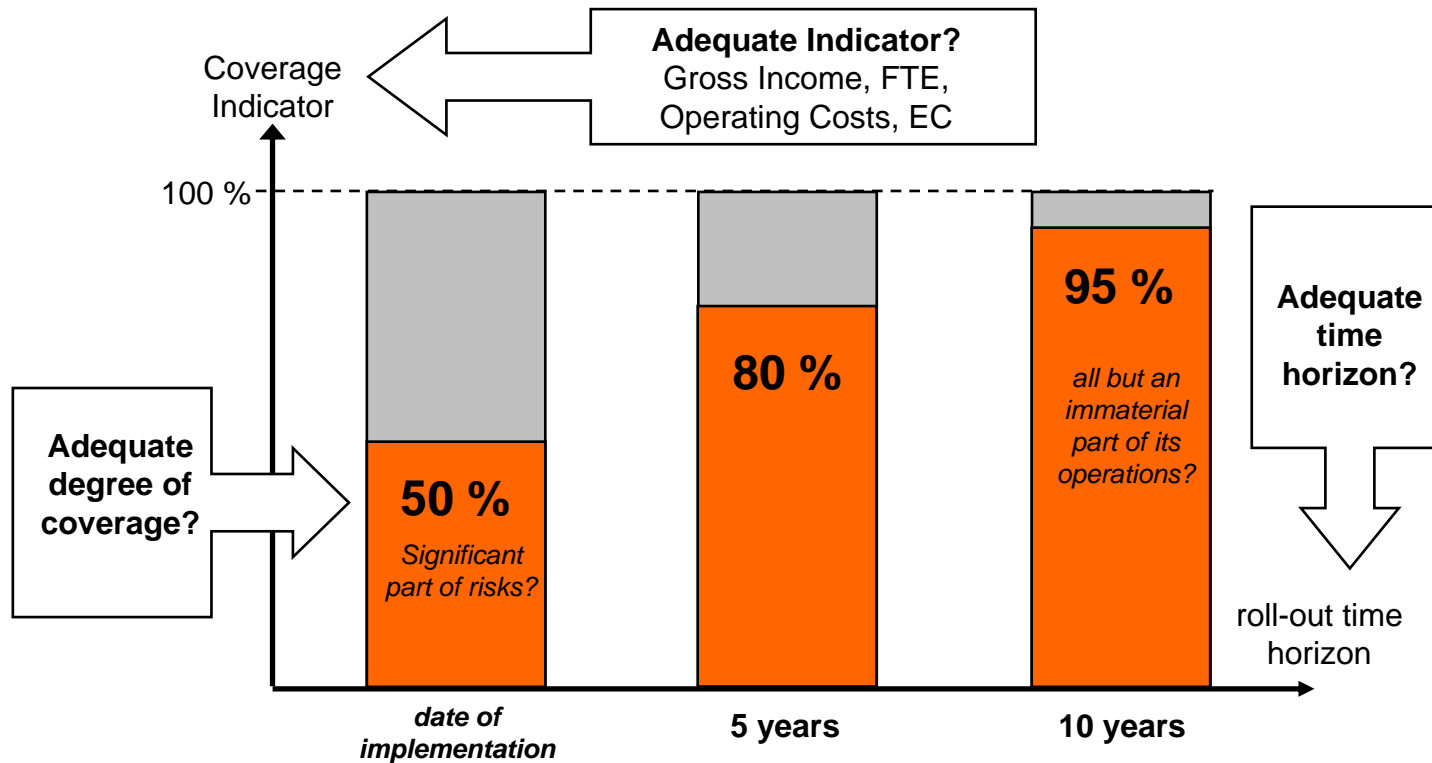


- Partial Use AMA-STA
- Gross Income Components and treatment of Outsourcing
- Correlation between risk factors
- Loss Data and Components
- Market- and Credit Risk Boundaries
- AMA Qualification Criteria
- Definition of Significant Subsidiaries



Current discussion on Partial Use

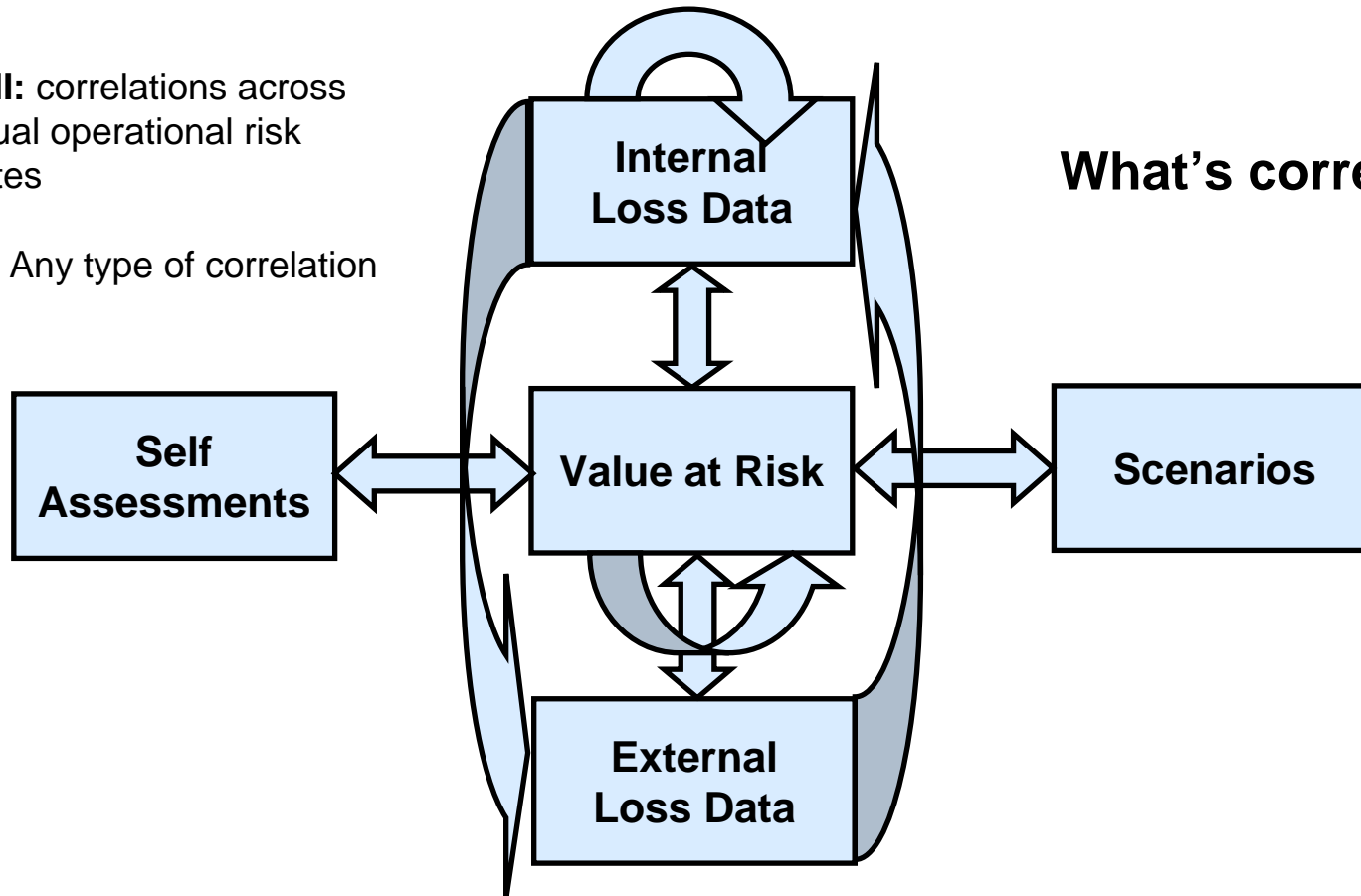
Basel II No. 680: „On the date of implementation of an AMA, a **significant part** of the bank’s **operational risks** are captured by the AMA; and the bank provides its supervisor with a plan specifying the timetable to which it intends to roll out the AMA **across all but an immaterial part** of its **operations**. The plan should be driven by the practicality and feasibility of moving to the AMA over time, and not for other reasons.



Current discussion on Correlations

Basel II: correlations across
Individual operational risk
estimates

SolvV: Any type of correlation



What's correlated?



An AMA Industry Study was started in 2004 to identify the implementation status



- The goal is to identify the **implementation status** of the AMA requirements and emerging **common practices** and possible **variations**
- Started in Oct.04. Return of questionnaires Dec.04. Evaluation and follow-up visits until 2Q 05.
- 18 (out of 61!) Banks are participating on a voluntary basis
- We have identified rd. **60 issues** which we think are relevant for AMA approval
- We ask for the following Documentations: **Roll-Out plan, Framework, Orga-Chart, Model Description, Example Scenarios, Example Risk Reports**

Structure of the Industry Study:

1. **Scope of Applications**
2. **OpRisk Framework**
3. **OpRisk Management Function**
4. **OpRisk Modelling**
 - 4.1. General issues
 - 4.2. Internal Data
 - 4.3. External Data
 - 4.4. Scenario Analysis
 - 4.5. Business Environment and internal Control Factors
5. **OpRisk Mitigation**

Cross-Examination of Results

- Upon receipt of the filled-out questionnaires, an evaluation is performed by BBK and BaFin
- Open issues are returned to the banks and discussed in follow-up meetings
- No valuation is given to the banks until the end of the industry study

After conducting the final follow-up visits an anonymized cross examination report was sent to the banks, followed by an individual feedback.

www.bundesbank.de

Timeframe:	
Start of the industry study and dispatch of questionnaires	2004
Return of completed questionnaires	4
Start of follow-up visits	
Conclusion of follow-up visits	2005
Cross-Examination of results, detailed feedback for individual banks	5



Regulatory Working Group Operational Risk



- The internal Regulatory Working Group develops Examination Principles and Examination Guidelines for the approval of the Standardised and Advanced Measurement Approaches.
- Consists of Bundesbank and BaFin supervisors.
- Meets every month for 1 to 2 days.
- Discussion, preparation and review of topics from the Industry Working Group.
- Training and support of examination teams.
- Discussion and standardization of past examinations

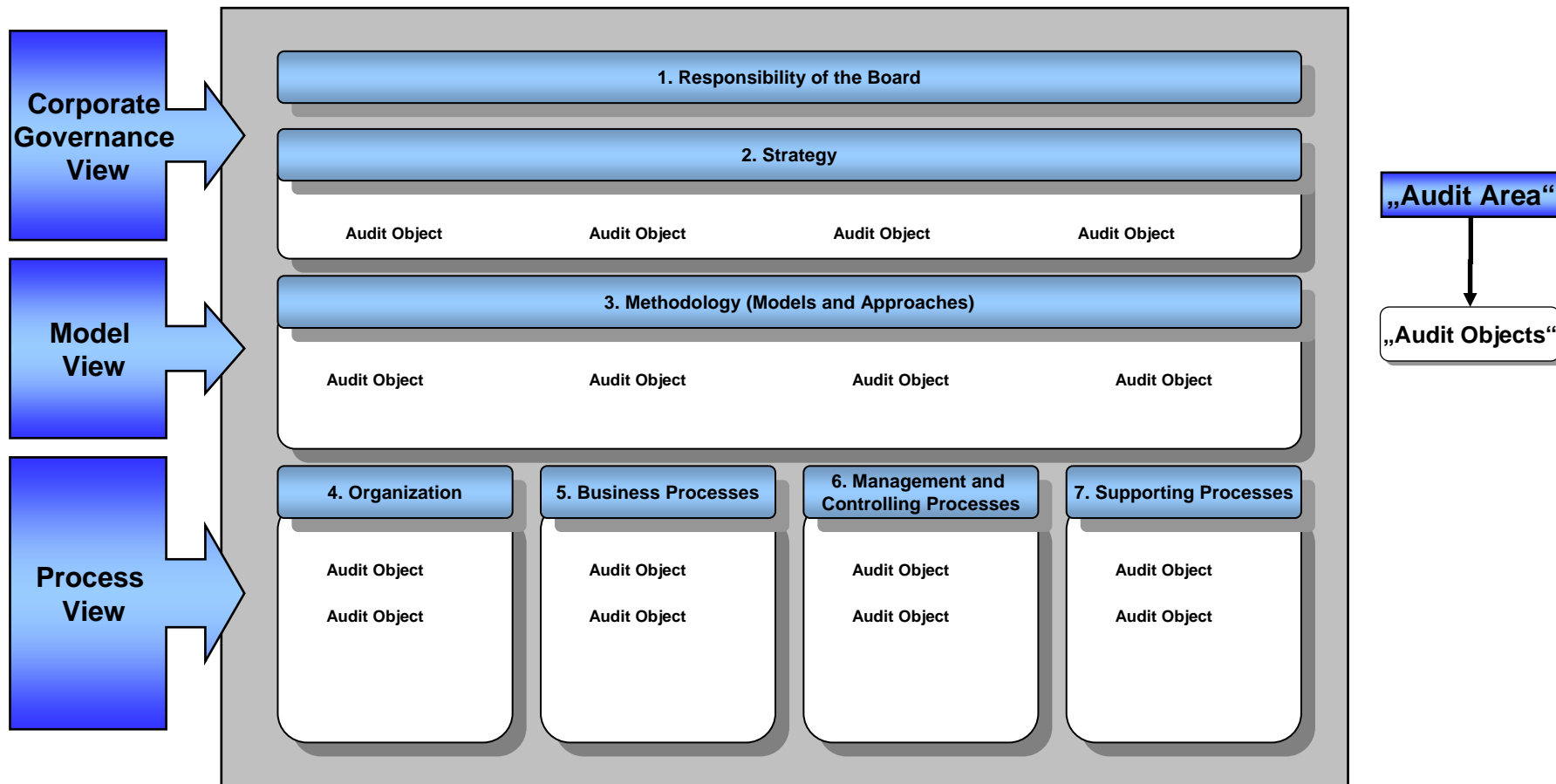


The Examination Principles specify methodic and organisational principles for AMA approval



- **Methodic Principles**
 - Risk orientation/risk based planning
 - Definition of system audits
- **Organisational Principles**
 - Pre-Audit Phase (Planning, Assignment, Announcement, Preparation)
 - Execution (Organisation, Documentation, Reporting structure, Findings and evaluations, costs, behavior)
- **Quality Assurance**
 - Central Point of Competence
 - Quality Control
 - Regular evaluations of reports and findings
- **Structure and Content of the Audit Report**
- **Appendix: Examination Guideline**

Our Examination Guidelines are all based on a common generic view on a bank



For each audit object exists a detailed guideline

Lf-Nr.	Prüfungsrelevanter Sachverhalt	Leitfaden	Referenz	Anmerkung
2.3.1	Abdeckung eines signifikanten Teils der operationellen Risiken durch den AMA	Ein signifikanter Teil der operationellen Risiken muss mit dem AMA-Anrechnungsbetrag abgedeckt werden. Bei einer Erstzulassung ist das Vorgehen diesbezüglich im Antrag zu erläutern.	SolvW § 293 (3) S. 3, (4) FG-Empfehlung Partial Use CEBS 4.3.1 Anforderungsliste 2	Laut Empfehlung des AMA 50% abgedeckt sein. Indikatoren s. FC schlüssig zu beg (Vermeidung vor Soll-Ist-Vergleich
2.3.2	Art der Abgrenzung AMA – andere Ansätze	Das Institut kann folgende Abgrenzungsarten verwenden: 1) nach internen Organisationsstruktur, 2) regulatorischen Geschäftsfeldern, 3) rechtlichen Einheiten.	SolvW § 293 (1),(2) FG-Empfehlung Partial Use Anforderungsliste 4	Die Abgrenzung und plausibel be die mit den stärk frühzeitig durch r auch das Vorhar Verlustdaten zu l BIA mit dem AM zumindest die qu erfüllt sein – dies Proportionalität.

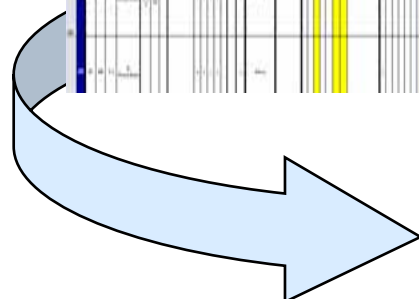
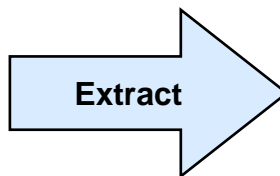
The tools of the Regulatory Working Group ensure consistency with Basel II and EU-Directive



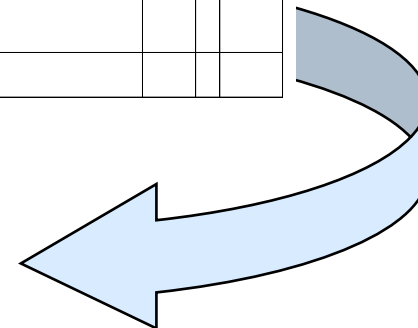
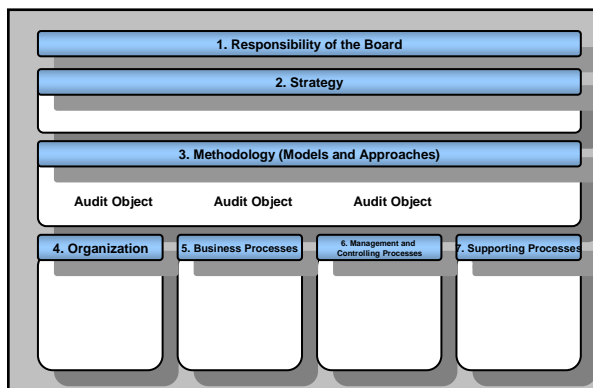
Rules Text Repository

AMA Industry Study Questionnaire

Nr.	Themen	Referenz	Kurzdarstellung	Umsetzungstatus	Sinnvoll	Verweis auf Dokumentation
1. Anwendungsbereich des AMA						
1.1. Partial Use						
1	Betrachten Sie, inwiefern der mit dem AMA bestimmte Teil der operierenden Risiken für die Erstenwendung für Sie wesentlich ("significant") ist.	680, BP 1-3				
2	Stimmen Sie den zeitlichen Ablauf der AMA-Implementierung in den Organisationsstrukturen (funktionale bzw. Geschäftsbereichsbereich) dar. Nach welchen Kriterien wird bestimmt, wo die Abgrenzung von Betriebsbereichen ("Business") Bereichen erfolgt, die im Zeitablauf nicht in den AMA integriert werden sollen? Legen Sie bitte, sofern vorhanden, den aktuellen Umsetzungsplan bei.	680, BP 4 681				
3	Auf welcher Basis wird der anzuwendende OpRisk-Ansatz bestimmt (Geschäftstätigkeit, wirtschaftliche Einheiten, Geographie etc.)?	681				



Examination Guideline



Identification of Audit Objects

Identification of Audit Objects



The SRP Qualification Program has 25 modules and requires 21 weeks of classroom trainings



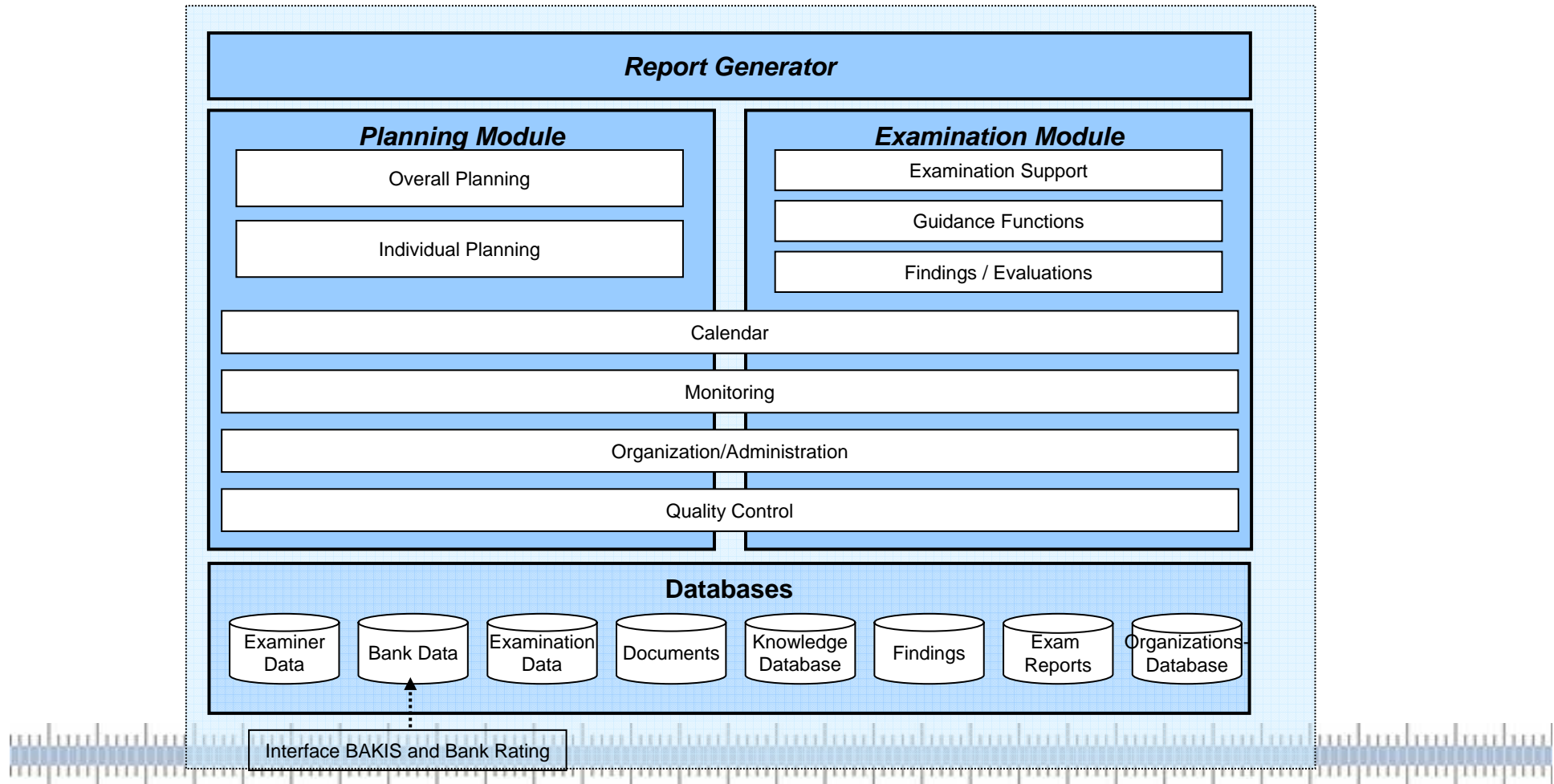
1. Banking Business (focus on Credit Business)	3 weeks
2. Financial Mathematics and Statistics	3 weeks
3. Financial Statements and external/internal Auditing	3 weeks
4. Risk Management and Controlling	4 weeks
– Module Q 11.43 OpRisk Management Basics (qualitative)	3 days
– Module Q 11.44 OpRisk Modeling (quantitative)	3 days
5. National and International Financial Regulation	5 weeks
6. IT and Data Processing in Credit Institutions	2 weeks
7. Behavioral Training	1 week

- The training is conducted by 63 internal trainers (supervisors) and 71 external trainers (bankers, auditors, consultants, IT experts)



We have designed a software solution for supporting the whole examination process: **ESPRIT**

General breakdown of the targeted software solution



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Approval for OR approaches

- BaFin and Bundesbank allow all Basel II OR approaches (BIA, TSA, ASA and AMA) in Germany
- Only AMA and ASA need explicit supervisory approval.
 - AMA On-site
 - ASA Off-site
- Banks have to notify BaFin and Bundesbank if they want to use the TSA. Banks need a good documentation and have to confirm to the regulatory bodies that the internal assessment has shown compliance with the regulatory requirements
- If Banks do not use AMA, ASA or TSA they have to use the BIA



Challenges of AMA approval and validation

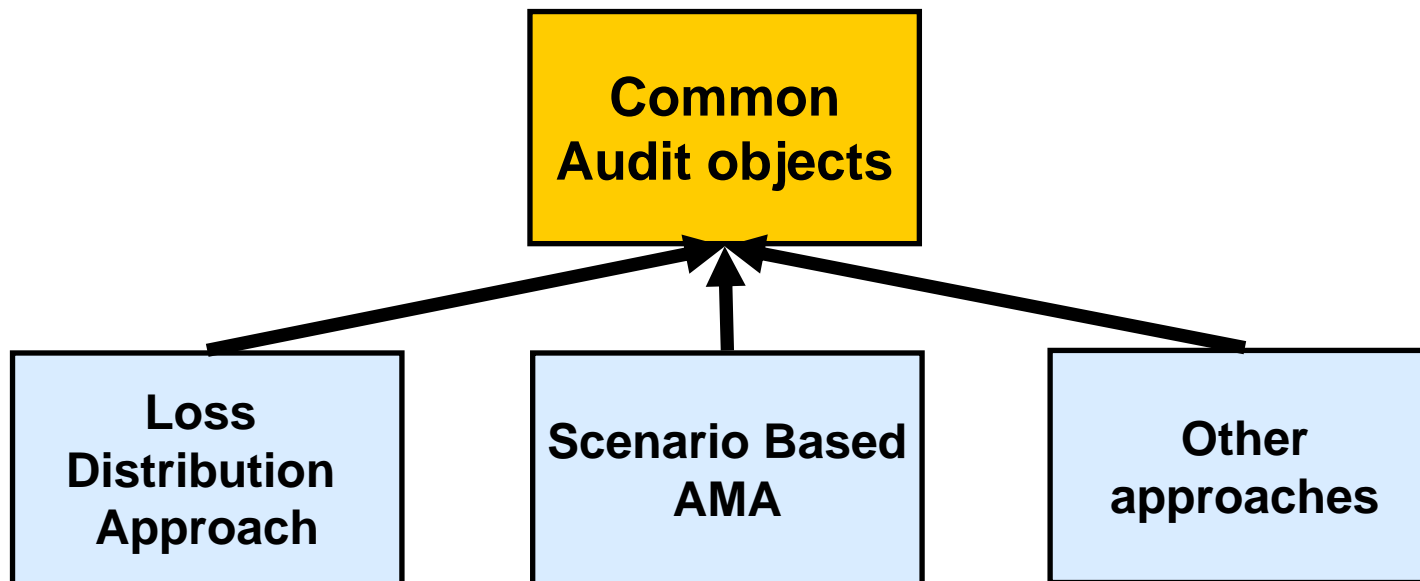


- Operational Risks do not satisfy the „the past is the best predictor of the future“ assumption
- Statistical validation techniques or backtesting will probably not even work in the foreseeable future
- Currently we have to think about validation in terms of credibility
- An assessment of the systems credibility requires a lot of judgement by the supervisor
- Reflecting the differences of banks, i.e. idiosyncratic risk profile and internal control system and the differences of AMA implementations
- We need to keep a balance between flexibility and comparability

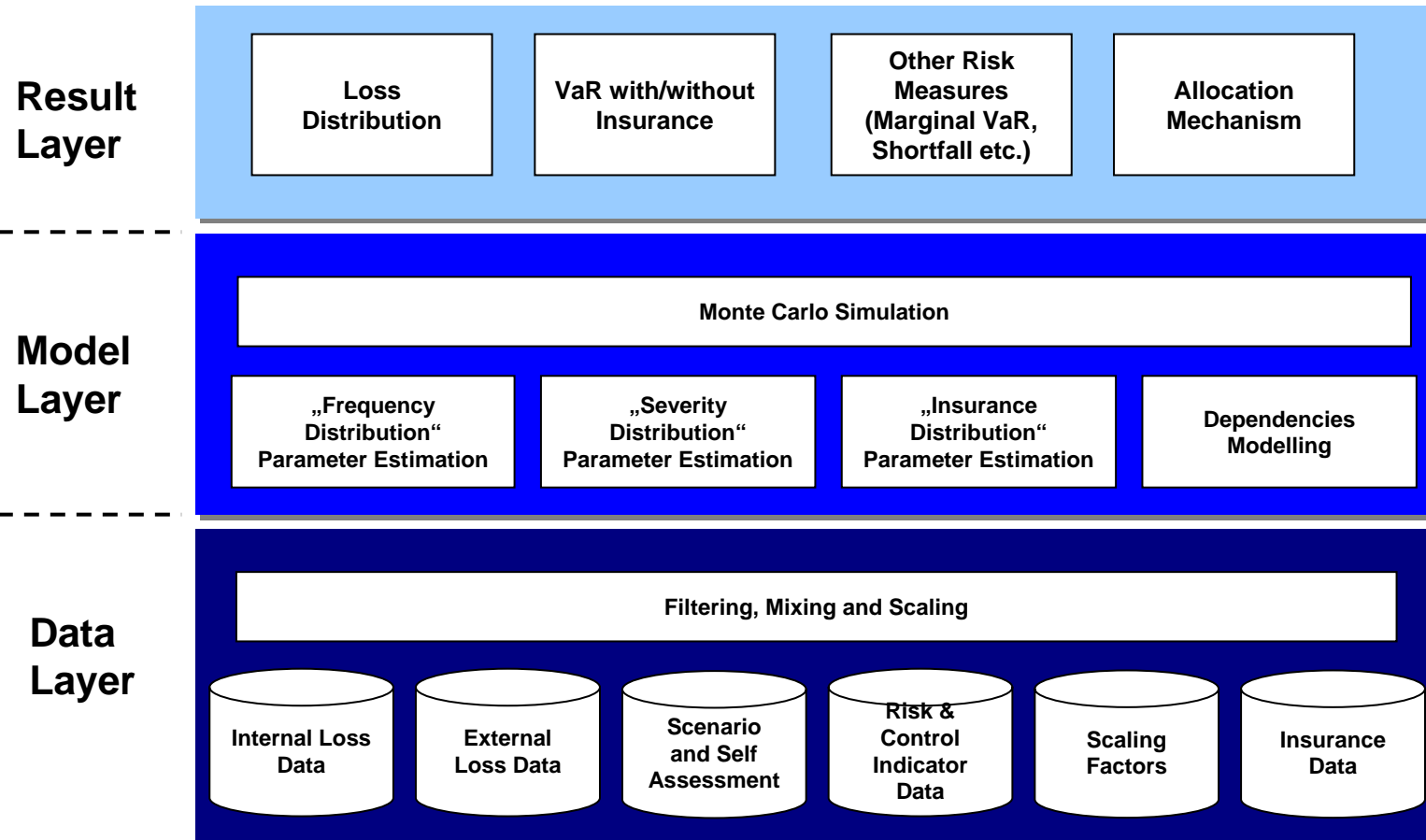


The biggest challenge: Comparability

How can we bring the different AMA models to a common denominator?



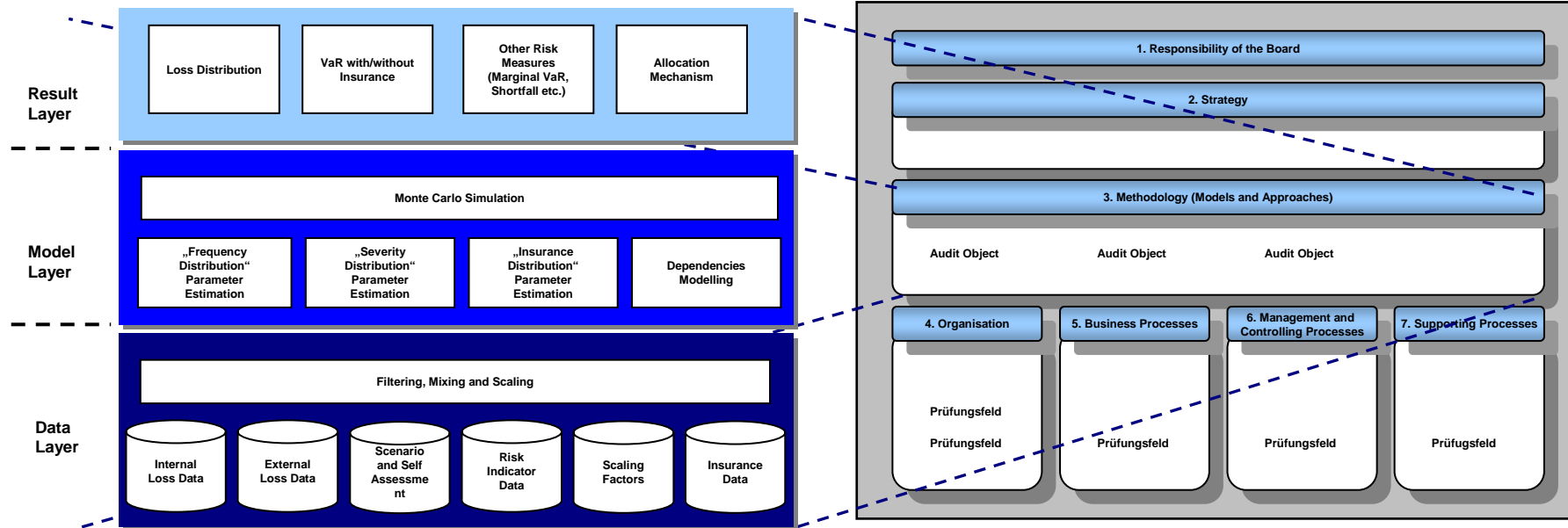
OpRisk measurement with an AMA follows a common logical three layer architecture



Which areas of an AMA should be validated?

Model Validation should be carried out on all AMA layers

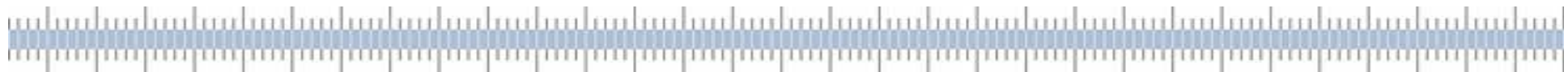
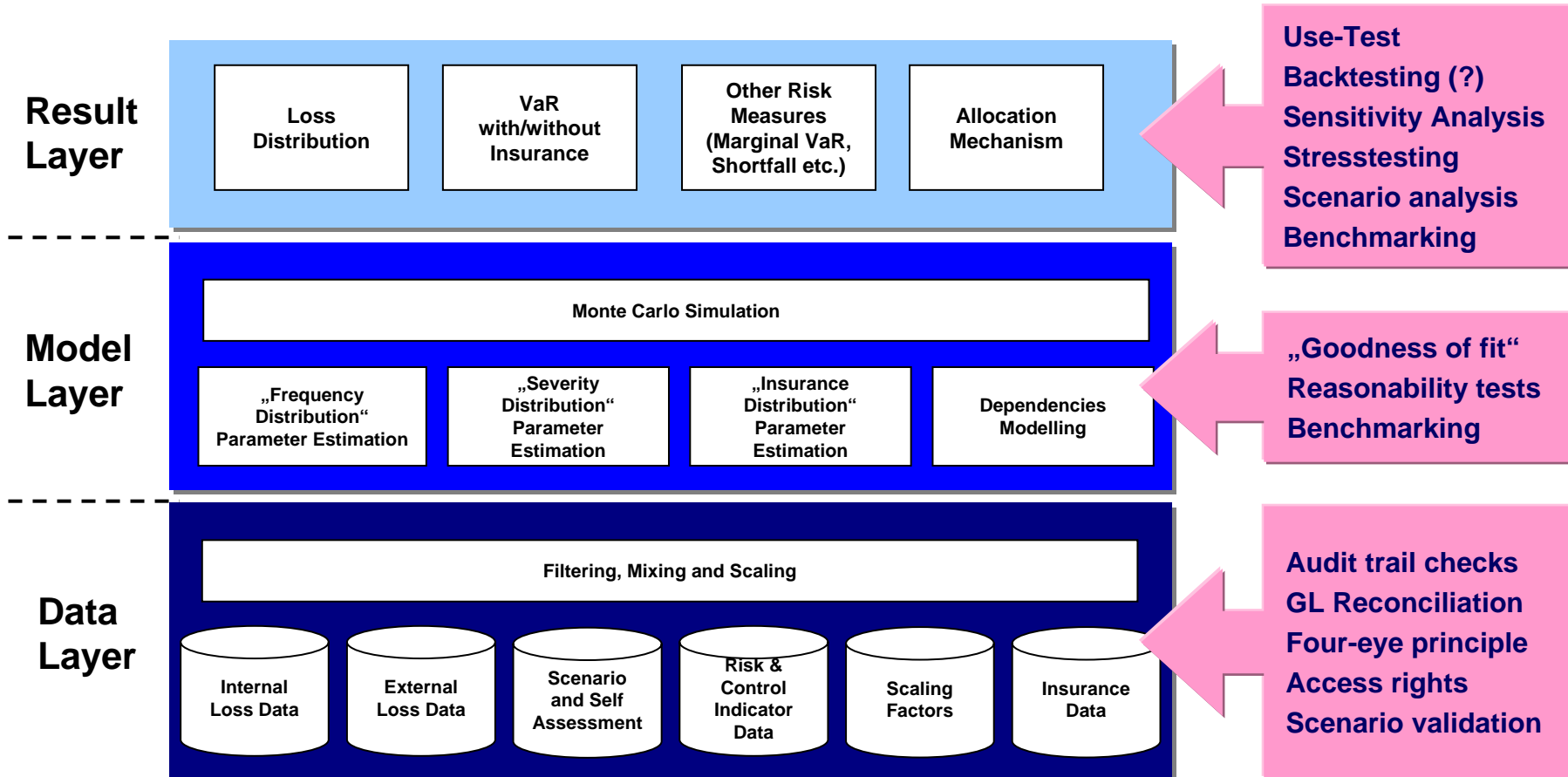
Model Approval requires validation of the organisational implementation



Validation from a supervisory begins with a review of the banks internal validation processes and their results



Possible AMA validation techniques



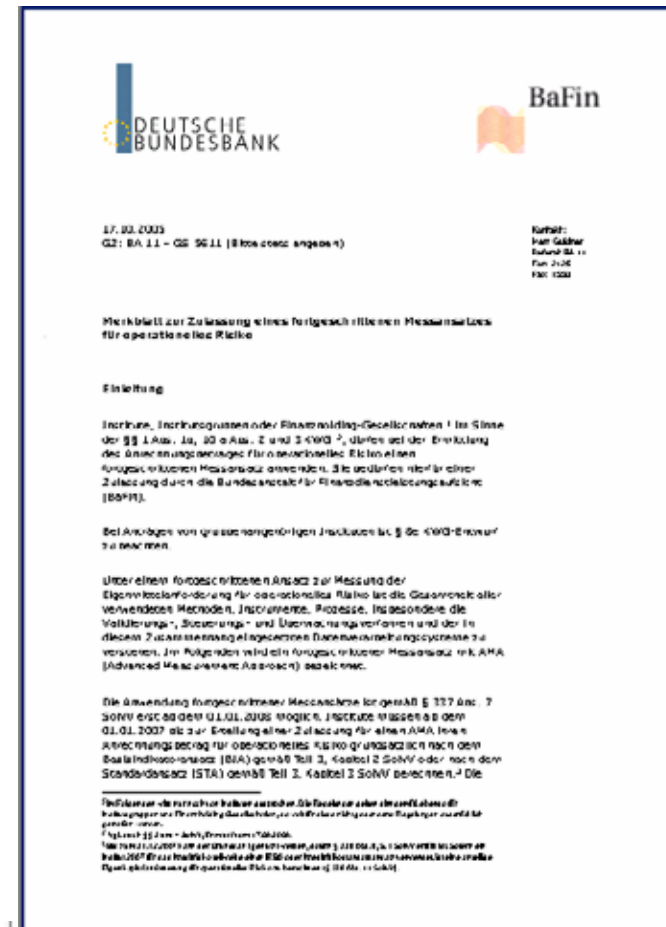
AMA Application Guideline (1)



The AMA Application Guideline was published in October 2005. Since June 2006 a redrafted German version and an English version are available.

The Guideline contains details on how to apply formally correct for an AMA.

First official applications in summer 2006.



AMA Application Guideline (2)



http://www.bundesbank.de/hankenaufsicht/hankenaufsicht_basel_zulassungama.php

Bankenaufsicht	
Motive und Ziele	
Bundesbank und BaFin	
Basel II	Basel II
Mindestkapitalanforderungen (Säule 1)	Zulassung zur
Aufsichtsverfahren (Säule 2)	Ab sofort könne
Marktdisziplin (Säule 3)	(AMA - Advance
Rahmenvereinbarung	Messansätze für
Nationale Umsetzung	die Eigenkapita
Grenzüberschreitende Zusammenarbeit	viel Eigenkapita
IRBA Zulassungsverfahren	Basisindikatora
AMA Zulassungsverfahren	Ab 2008 könne
Konsultationsanlässe	Deutsche Bund
	Nutzung der Ve

<http://www.bafin.de/cgi-bin/bafin.pl?verz=0402020000&sprache=0&filter=&ntick=0>

Startseite >> Für Anbieter >> Kreditinstitute >> AMA-Zulassung		
Aktuelles	AMA-Zulassung	
Wir über uns	17.10.2005	Merkblatt zur Zulassung e
Für Verbraucher	17.10.2005	Anforderungsliste AMA
Für Anbieter	17.10.2005	Ausfüllhinweise zur Anfor
Konsultationen	17.10.2005	
Rechtliche Grundlagen & Verlautbarungen		
Internationale Zusammenarbeit		Industriekaktion AMA
Presse & Publikationen	20.09.2005	Abschlussbericht zur Indu



AMA Guideline - Introduction -



- AMA for calculating regulatory capital is allowed from 2008 subject to prior approval
- BIA or TSA in 2007 (or Basel I)
- Approval examinations are already possible based on the draft regulation
- Close cooperation between bank and supervisor is necessary in order to obtain timely approval
- Request to submit applications as soon as possible
- Applications are generally processed on a first-come, first-served basis



AMA Guideline - Basic principles -



- A written application is necessary
- An application for AMA approval for a group must be submitted by the superordinated institution
- No separate AMA approval applications necessary for each subordinated institution
- Substantial changes to the AMA are to be coordinated with BaFin
- Depending on the type of change and on the type of approval that has already been granted, it may be necessary to re-apply for approval
- The partial use of an AMA in combination with either the BIA or the TSA within an institution, a group of institutions or a financial holding group is permitted subject to the conditions and to prior authorisation from BaFin



AMA Guideline -How applications are examined-



- Approval procedure begins with submission of an application (each bank)
- “Formal check”, completeness of required application documents
- The examination covers compliance with the requirements for
 - the organisational and operational structure of the OR measurement system
 - the suitability of the AMA for calculating the capital charge, including input data quality
 - the internal procedures for validating the risk measurement system
 - the reliability and integrity of the relevant IT systems
 - and, if necessary, the feasibility of the time schedule
- Approval is given by written notification based on the results of an exam
 - examination report and possible meeting to discuss the result of the examination
 - approval may be subject to compliance with additional requirements
- The applicant institution assumes the costs of the approval procedure
- Compliance with requirements and time schedule, subsequent follow-up

AMA Guideline - Preconditions for approval -



- An on-site AMA approval examination possible only if the institution has
 - all necessary organisational and operational measures and processes in place
 - been using the AMA to be examined as a key instrument for OR and
 - satisfied itself that the AMA is suitable for measuring and managing OR
- The internal review of the AMA (third bullet) comprises in particular
 - the suitability of the organisational and operational structure
 - the implementation and application of the procedures
 - the relevance/quality of the data used
 - the quantitative and qualitative procedures for validating the model and
 - the relevant technical environment.
- Necessary measures to remedy deficiencies must be documented.
- Existing audit results (internal or external) may be used also



AMA - Components of the application -



- Application, requirements list and time schedule in German in triplicate
- Group application
 - include a list of the affiliated institutions that are to be included in the AMA
 - for subordinated institutions, the approach on a single-entity basis
 - for institutions abroad, host country and its responsible national supervisors
- Partial use:
 - provide the defining criteria
 - demonstrate that a significant percentage is included
- Contact person and a deputy
- Additional documentation in connection with the AMA requirements list



AMA - Components of the application –

Additional documentation should include at minimum



- The operational risk framework, including the implementation decision
- Organisational charts of the institution's internal operational structure
- Description of how the AMA is used in risk management,
- Description of all the components of the AMA model. This includes:
 - model input, together with procedural steps leading to the results
 - data types used (combination of the four required elements)
 - implicit assumptions, aggregation procedures, allocation methods
- Internal risk categories, assignment to business lines and event types
- Description/Documentation of the internal validation process
- Arrangements for adjustment and refinement of the AMA model/framework



Current Issues



- **We have just finished the final consultation of the Solvency Ordinance and expect it to be published by the end of this year.**
- **So far we have received five formal AMA applications and have been on-site in two German banks (banking groups)**
- **Future work includes the finalisation of the explanatory notes of the solvency ordinance, as well as a continuous updating of the AMA examination guidelines**



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