Safety Framework Maturity Surveys - Current Methodology

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The Initiating Events

October 8, 2001 - 118 Killed as jetliner and business jet collide on runway in Milan, Italy.

July 1, 2002 - Lake Constance mid-air collision kills 71, mostly children.

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Study remit

- To review Safety Regulation and Safety Management systems addressing:
- Collection, dissemination and sharing of incident data;
- ECAC safety objectives on incidents and accidents;
- Publishing annual indicators and showing progress against targets;
- SMS maturity;
- Extent of best practice promotion;
- Safety initiatives undertaken in ECAC States;
- implementation of ESARRs by ANSPs;
- Response to EUROCONTROL decisions on ATM safety in ECAC States;
- the extent to which ATM safety documentation is the public domain;
- identification of specific safety programmes addressing National safety issues.

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The remit - specific reports required

- Establish the current situation in all ECAC States in regard to:
- organisational structures for Safety;
- safety Rules and Standards;
- safety Practices;
- achieved Safety Performance;
- best practice safety initiatives;
- issues affecting the implementation of ESARRs;
- ATM safety specific documentation available in the public domain;
- Safety concerns of User and Air Traffic Controller bodies.

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Methodology

Formulate Study Areas based on remit

Define what constitutes 100% maturity

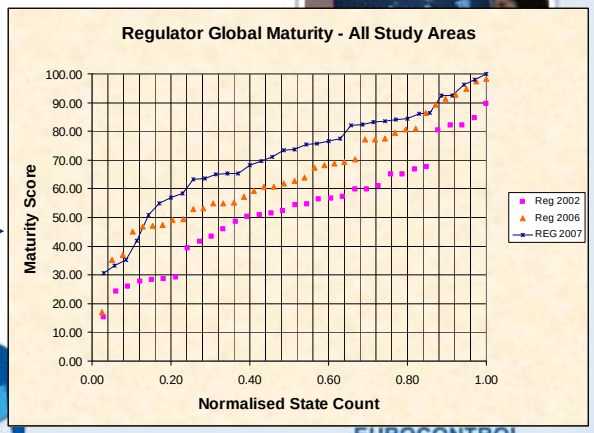
Develop question sets ANSP, REG and USE

Develop examples for initial, planned, developing and mature situation per question

Define what constitutes 100% maturity

Map questions onto Study Areas and define weight 0 to 5

Collect scores and calculate maturity by Study Area and overall



Definition of Study Areas

Quantitative Study Areas

A1	States' Safety Capability
A2	The collection and dissemination of incident data
A3	Safety Performance Measurement
A4	Promotion of best practice
A5	Organisational structures for safety
A6	Current safety rules and procedures
A7	Current Safety Culture
A8	Current achieved safety performance - deleted
A9	Current perceived safety levels
A10	Disclosure of safety information
B1	The implementation of SMS
B2	Timely compliance with international obligations

Qualitative Topic Areas

B3	Identification of specific safety programmes within States that address national safety issues.
B4	Describe the current situation with regards to issues affecting the implementation of legislation.
B5	Identify potential weaknesses in the safety of air navigation that warrant special or immediate attention.
B6	Identify the current safety concerns of the airspace users representative bodies.
B7	Identify current safety concerns of the Air Traffic Controller's representative bodies.
B8	Establish the position regarding whether or not the State's ATM safety indicators should be published annually to demonstrate that agreed targets are achieved?

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Survey – key elements

Data collection

- Obtain questionnaire responses
- Validate replies through LCIP and Interviews
- Capture concerns, obstacles, doubts and grievances in study repository
- Capture enablers attitudes & perceptions in study repository

Interpretation and reporting

- Study Repository links issues to Study Areas
- Analyse issues for different maturity development
- Report text is based on issues and reported by maturity category

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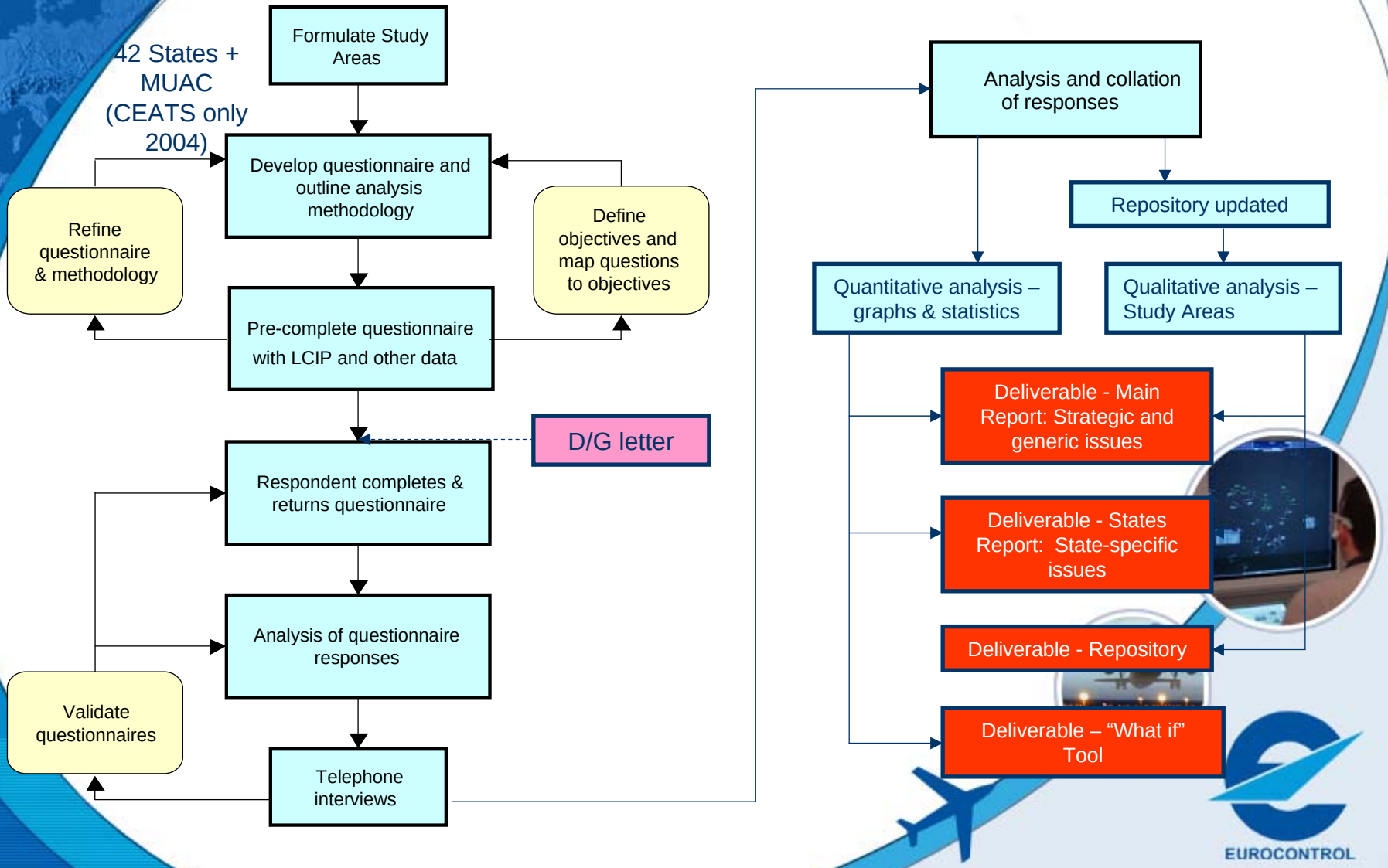
Study Methodology – overall



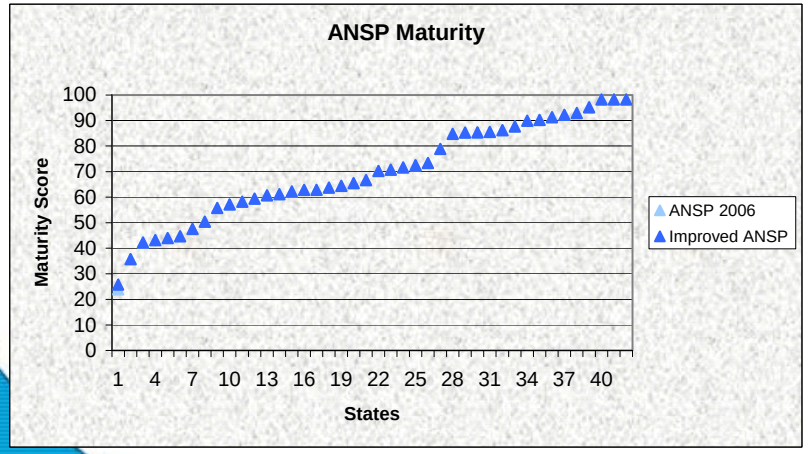
Management Tools – The Repository

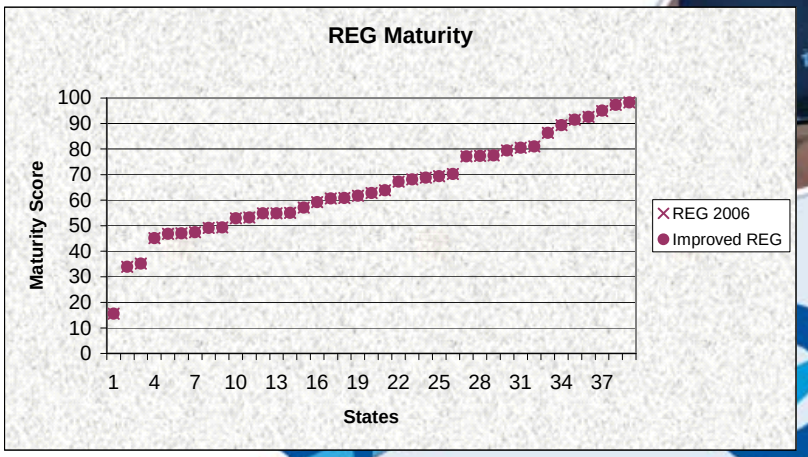
2006 SSAP ATM Safety Survey Interview Repository

ntity	State	SMS element or external influence	of	Issue (description of problem, enabler, good practice, advice etc)	Effect on ECAC SMS and improvement planning	A1 - ECAC State's safety objectives	A2 - The collection and dissemination of incident data	A3 - The use of ATM Safety Indicators	A4 - Promotion of best practice	A5 - Organisational structures for safety	A6 - Current safety rules and standards	A7 - Current safety practices	A8 - Current achieved safety performance	A9 - Current perceived safety within ANSPs	A10 - Public Acces Performanc	B1	
ANSP		ESARR 4 TLS/ESARR 2 Trend analysis	TI	The TLS outlined in ESARR 4 is converted to a 1/2500 year event while a serious incident would occur every 1/300 years. These are meaningless targets for xxxxxx thus assistance is required in their application and implementation.		1	1	1			1					1	1
ANSP		ESARR 3 SMS	TI	The Organisational structure is complete and now focuses on establishing the SMS procedures including the reporting and investigation processes. The safety assessment process must be developed as do internal audits.				1		1	1					1	1
ANSP		ESARR 2 Safety Indicators	TI	Lack of knowledge about the development and implementation of safety indicators.				1			1	1	1			1	1
ANSP		ESARR implementation at ANSPs	TI	ESARRs are mandated and in general legislation is in place with the exception of TLS. The CAA translates ESARR and ICAO regulations into xxxxxx and publishes them in a national journal.				1			1	1				1	1
ANSP		ESARR 2 Safety Indicators	TI	KPIs are defined as part of the regulatory oversight process and this is completely compliant with the ESARR requirements.	Many other states are having problems in developing quantitative KPIs			1			1	1	1			1	1
ANSP		ESARR 4 TLS/ESARR 2 Trend analysis	TI	Quantitative safety targets have been set by the regulator and they have been in place for some time now. He was aware that this was a problem for many ANSPs and regulators and he had been approached on several occasions by other bodies for advice and help.	Many other states are having problems in developing quantitative safety targets.	1		1	1		1	1	1				1
ANSP		ESARR 4 TLS/ESARR 2 Trend analysis	TI	TLS's have been developed for each operational area; 4 Regional airports. Indicators have been set up and progress is being monitored against the TLS's. The TLS's have been set for each group of occurrences A, B, C, D and E as per ESARR 2. EUROCONTROL proposed a 6% p.a reduction in TLS would be appropriate to counteract the prediction in traffic growth.	Achieved safety levels are know and trends are being monitored.	1		1	1			1	1				
REG		ESARR 2 Safety Indicators	TI	Safety Indicators are not in place yet - this will have to be taken up by the NSA.	The introduction of safety indicators is lagging behind.			1					1			1	1
ANSP		ESARR 4 TLS/ESARR 2 Trend analysis	TI	Only qualitative targets have been developed internally on our own database and help is needed	Poor or inadequate risk-based approach to safety		1	1			1	1		1		1	1

Management Tools – The “What if” Tool

What if?												
	Study Areas											
	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	B1	B2
Current average - ANSP	69.7	72.6	69.4	72.2	74.3	69.7	73.5	68.0	68.3	56.3	72.6	71.0
Current average - REG	65.0	65.4	60.7	68.9	71.6	66.4	69.5	64.1	63.0	51.0	51.0	68.3
Global improvement initiatives												
Percentage improvement in study area?	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Improvement initiatives targeted by size	all	all	all	all	all	all	all	all	all	all	all	all
Percentage improvement in study area?	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Improvement initiatives targeted by growth	high	all	all	all	all	all	all	all	all	all	all	all
Percentage improvement in study area?	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Improvement initiatives for specific states												
Percentage improvement in study area?	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Applies to ANSPs, Regulators or both?	Both	Both	Both	Both	Both	Both	Both	Both	Both	Both	Both	Both
Improved Average - ANSP	70.2	72.6	69.4	72.2	74.3	69.7	73.5	68.0	68.3	56.3	72.6	71.0
Improved Average - REG	65.1	65.4	60.7	68.9	71.6	66.4	69.5	64.1	63.0	51.0	68.3	65.8





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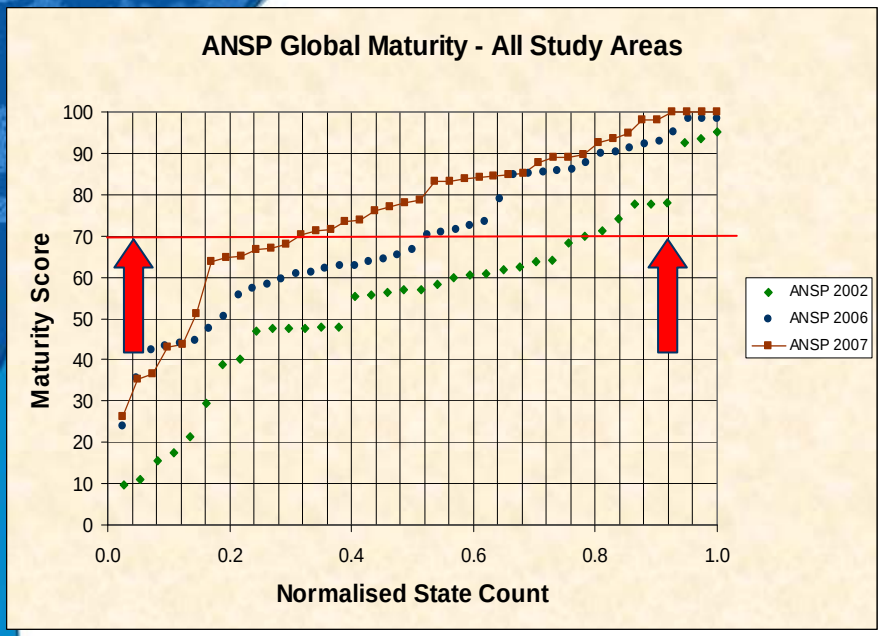
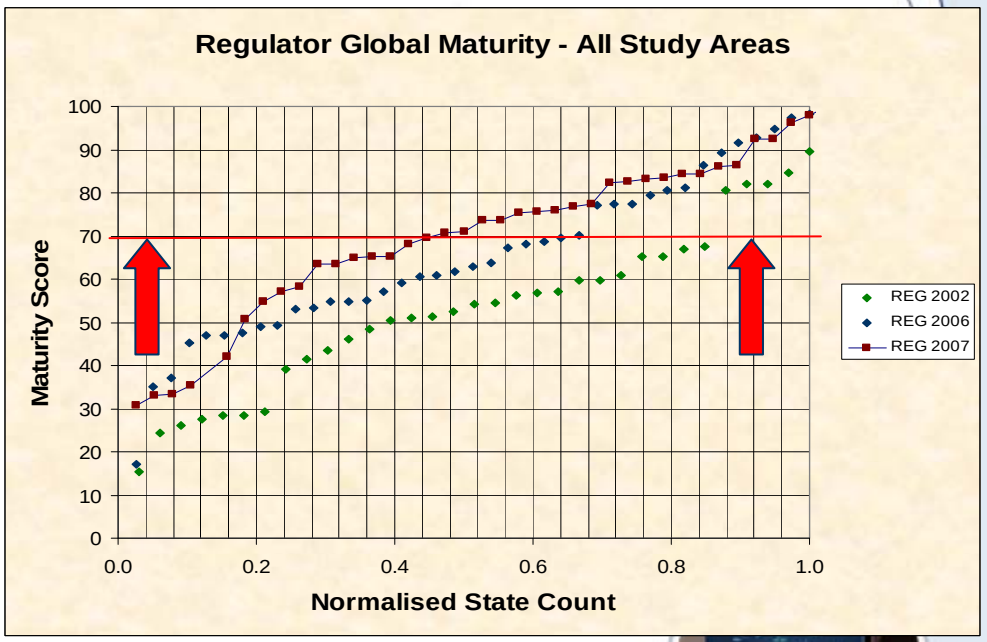
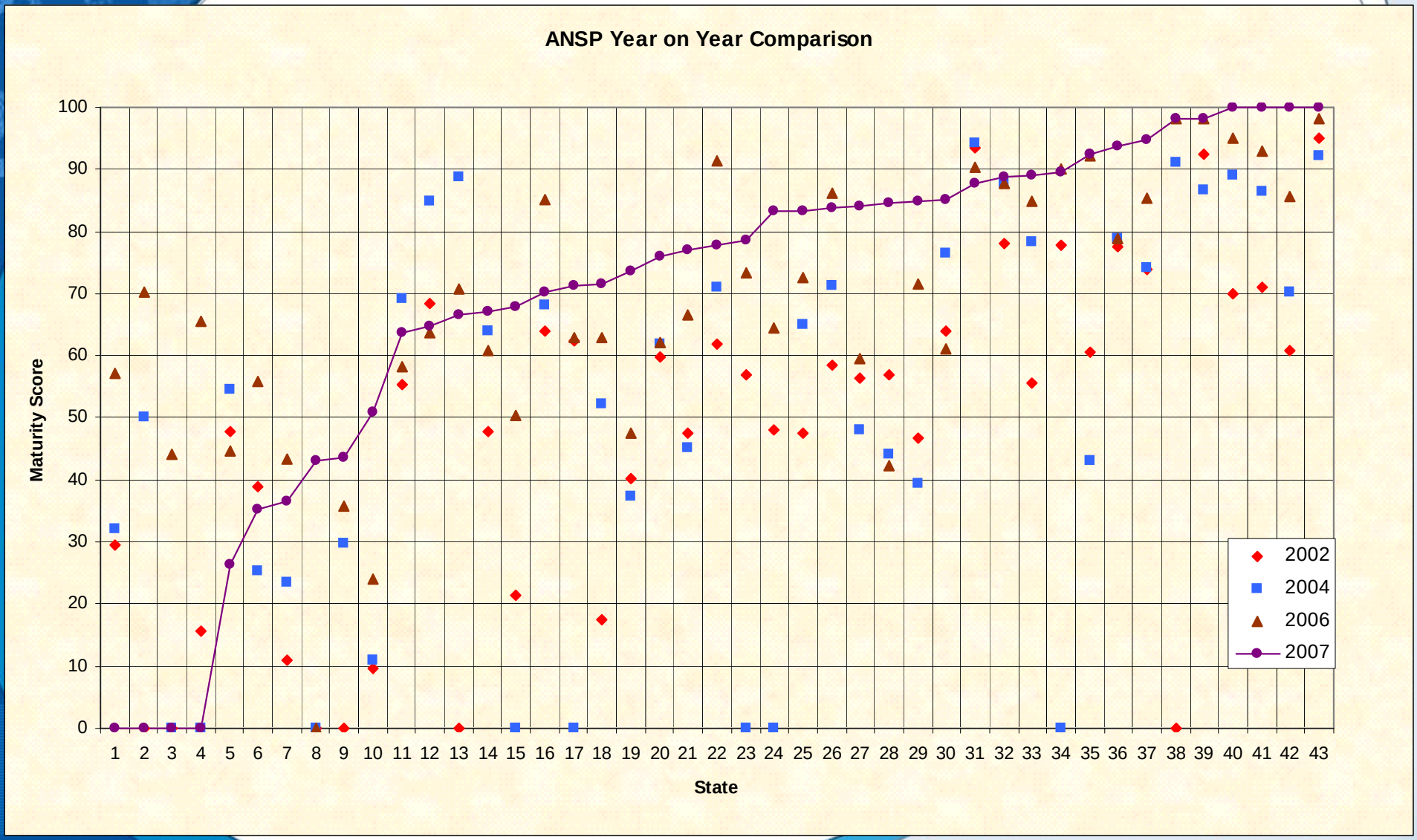
ATM Safety Maturity Results



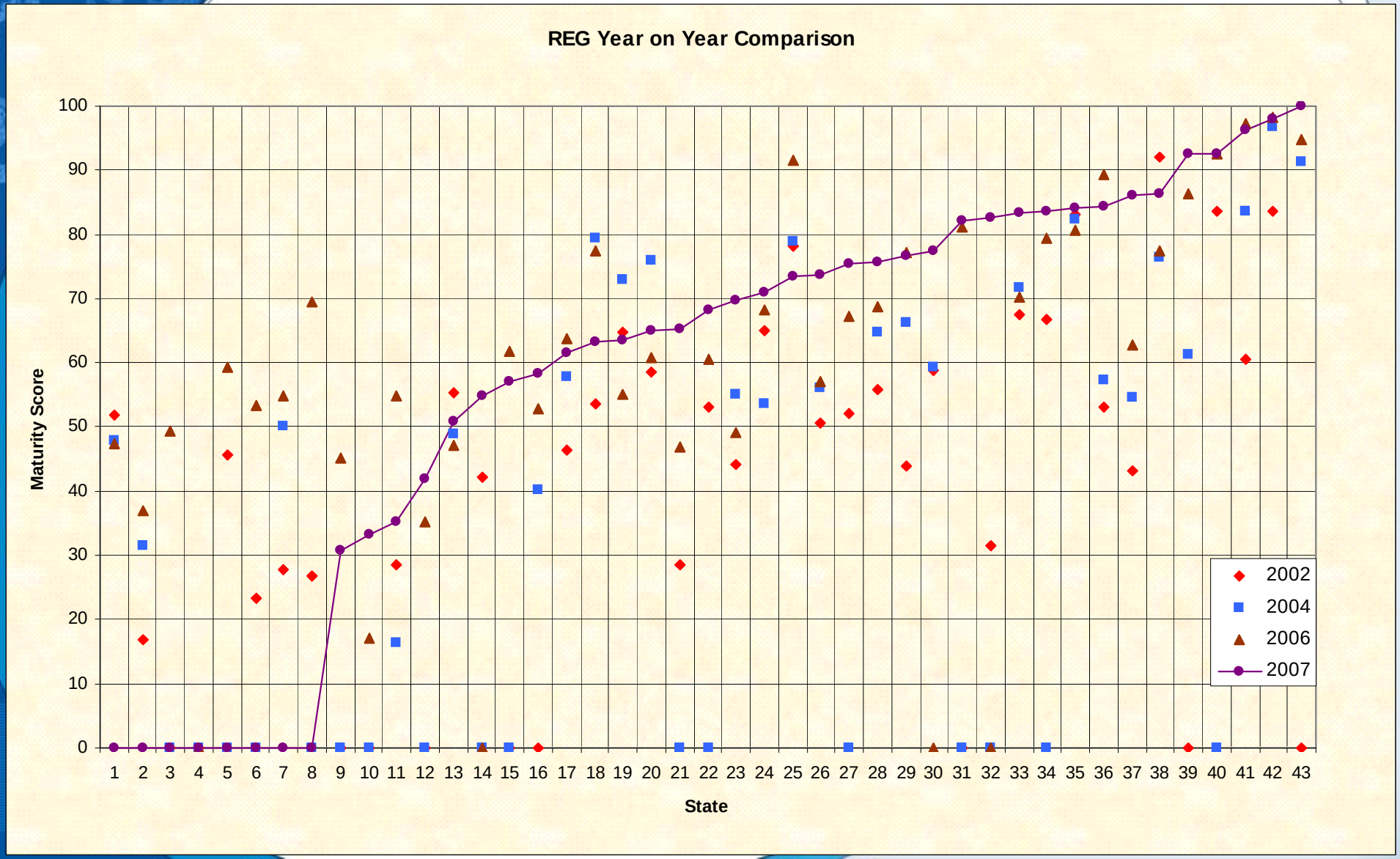


Overall average maturity	ANSPs %	% Change	Regulators %	% Change
2002 SSAP Survey	55		53	
2004 SSAP Survey	62	7	62	9
2006 SSAP Survey	70	8	65	3
2007 Survey	76	6	71	6
Total change 2002-2007		21		18

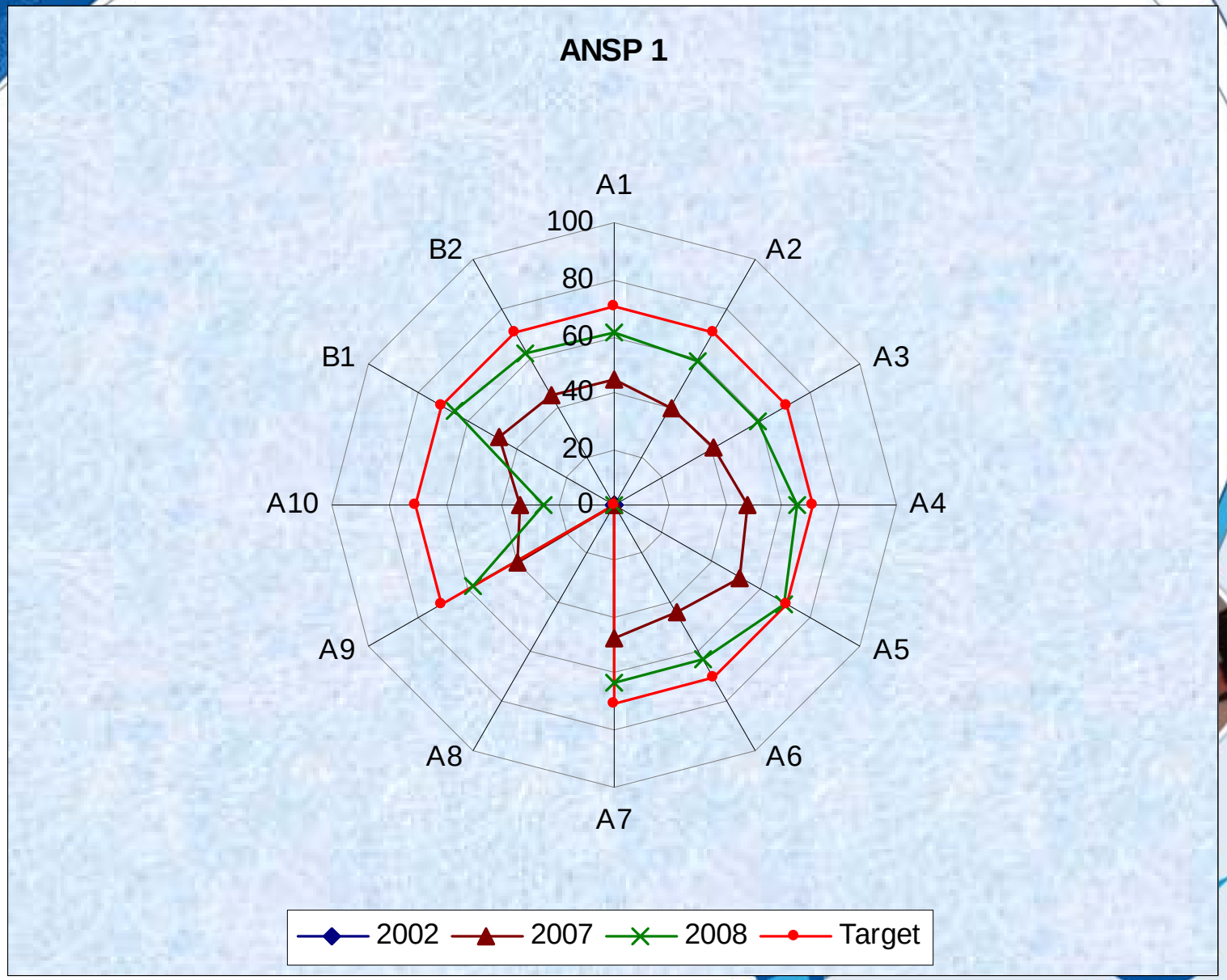
Safety maturity – global ANSP individual evolution 2002-2007



Safety maturity – global REG individual evolution 2002-2007



Further Analysis of individual results



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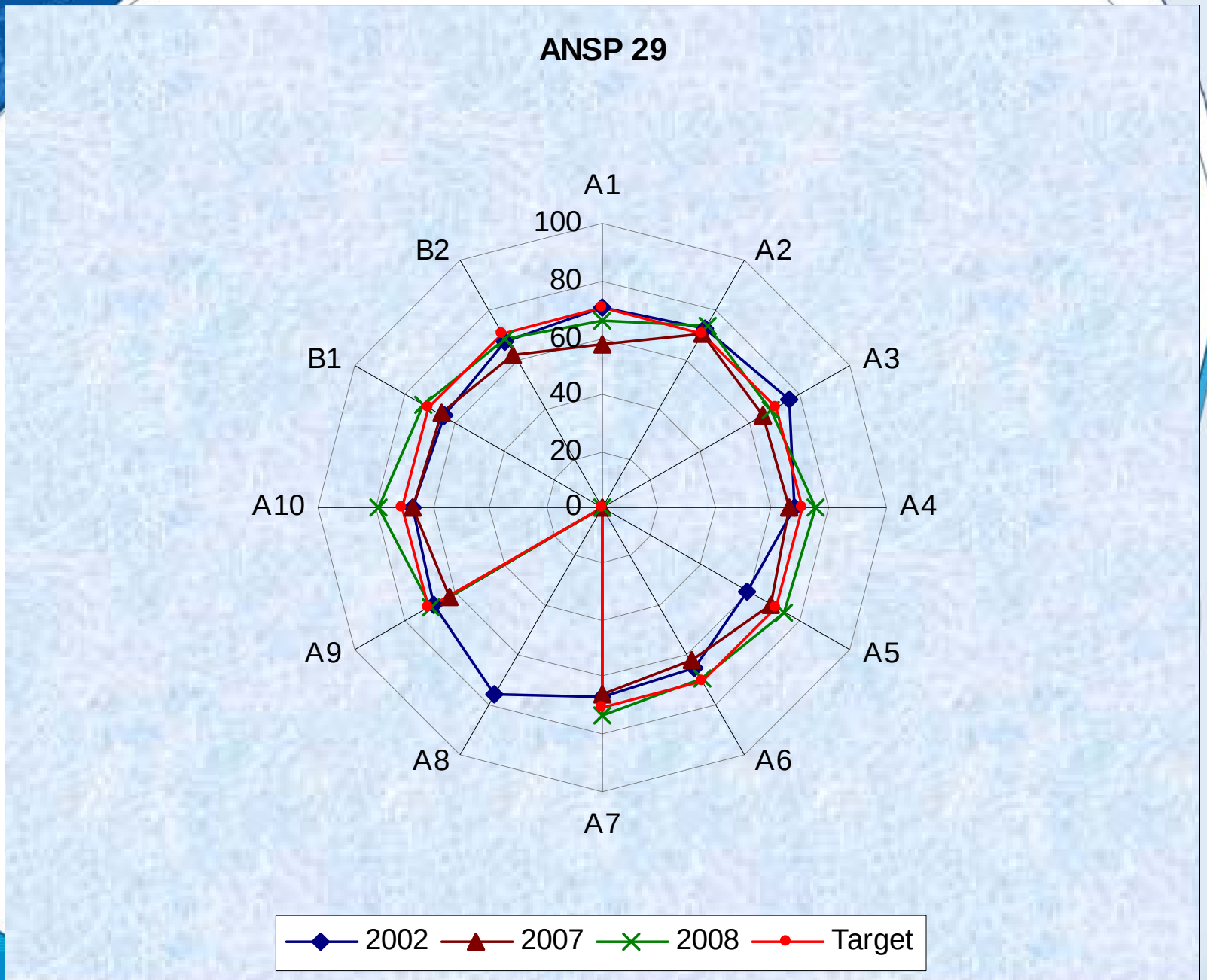

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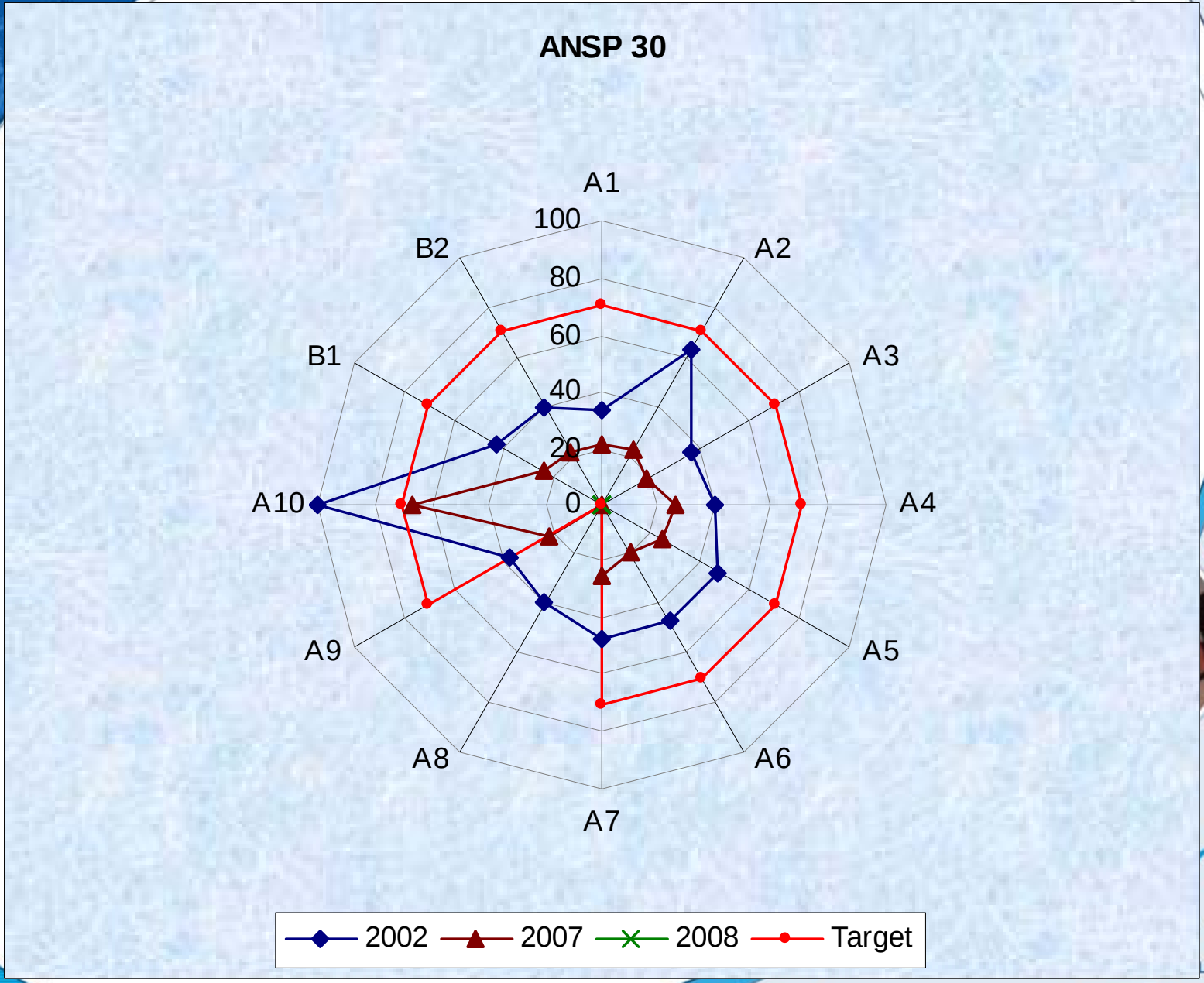

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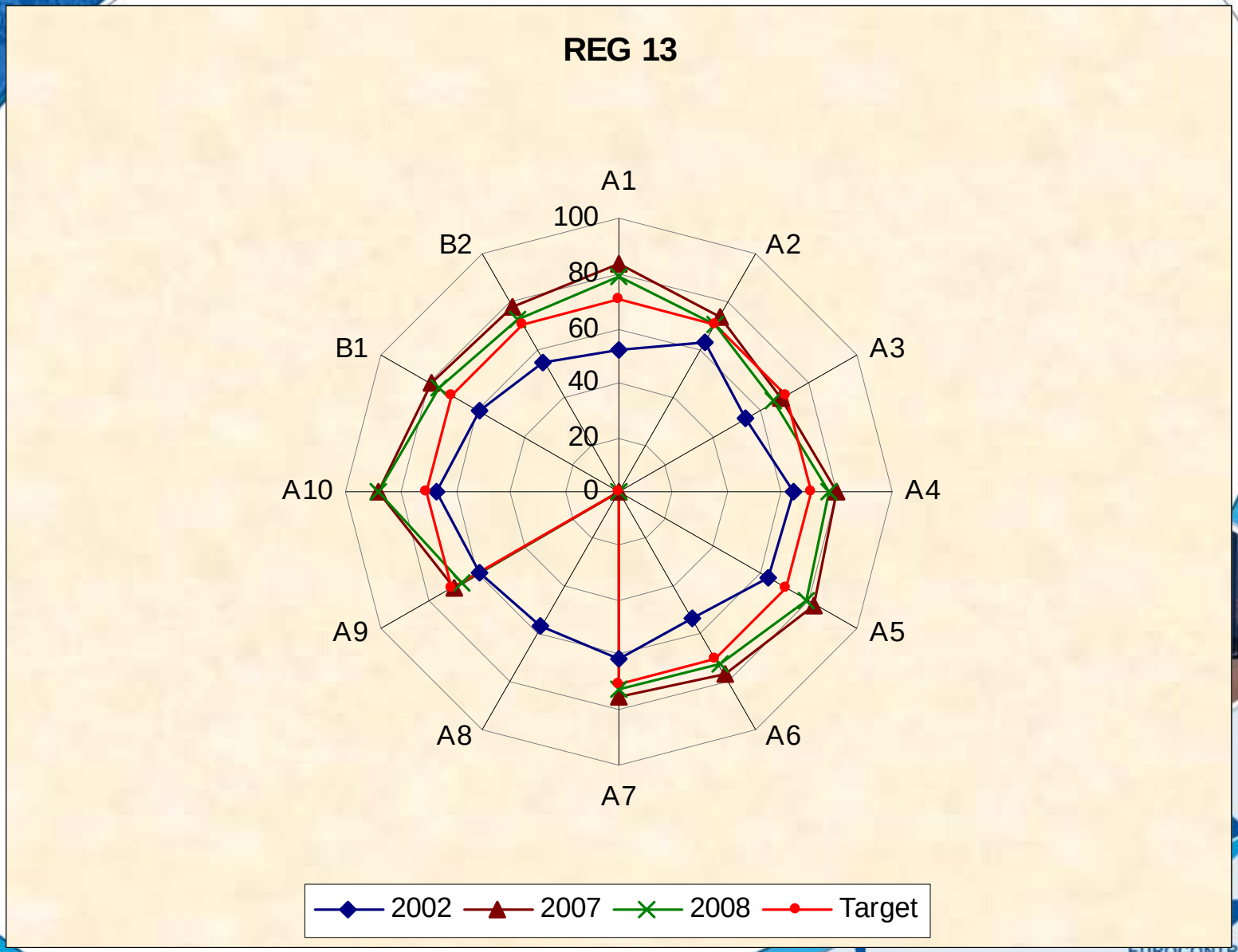

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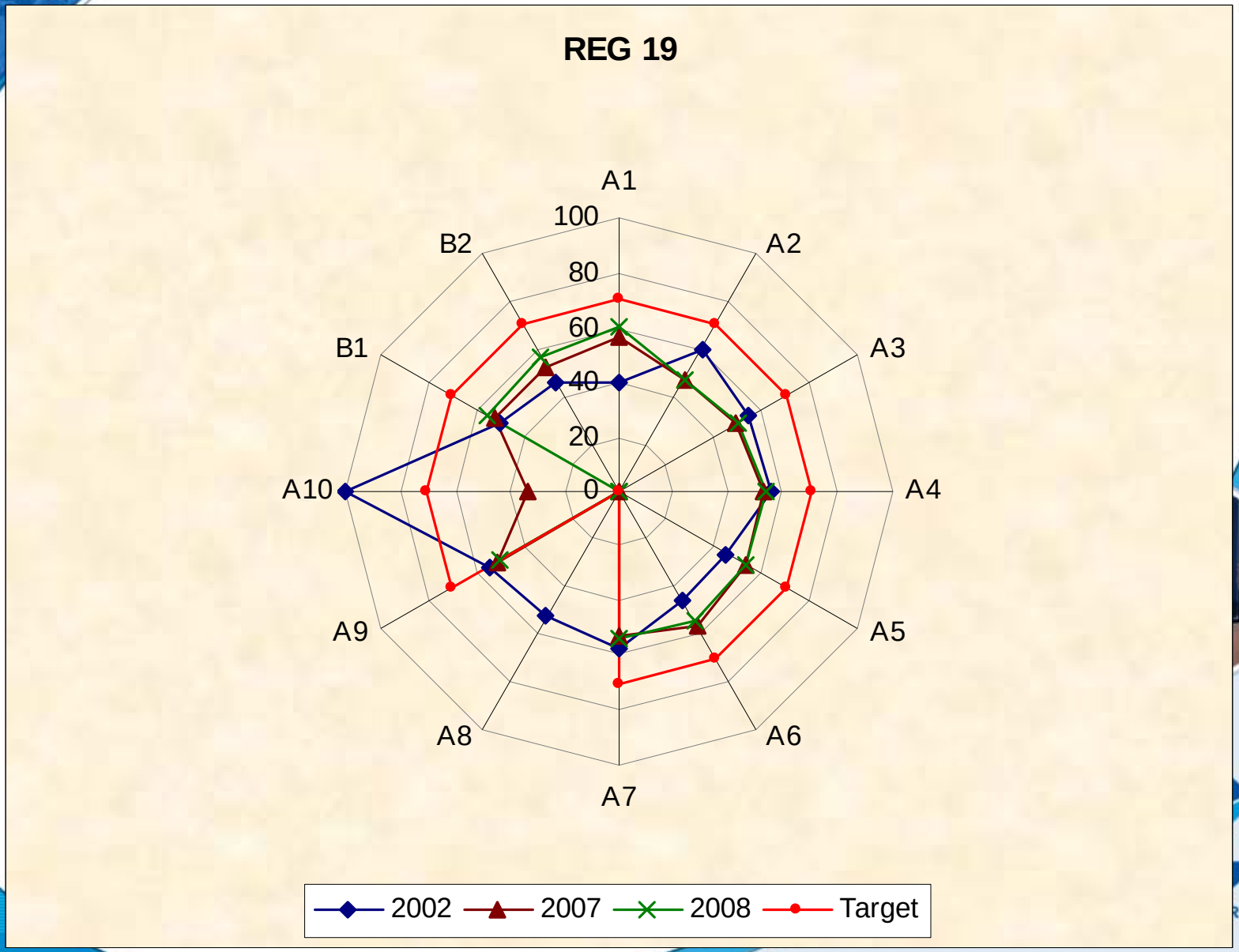

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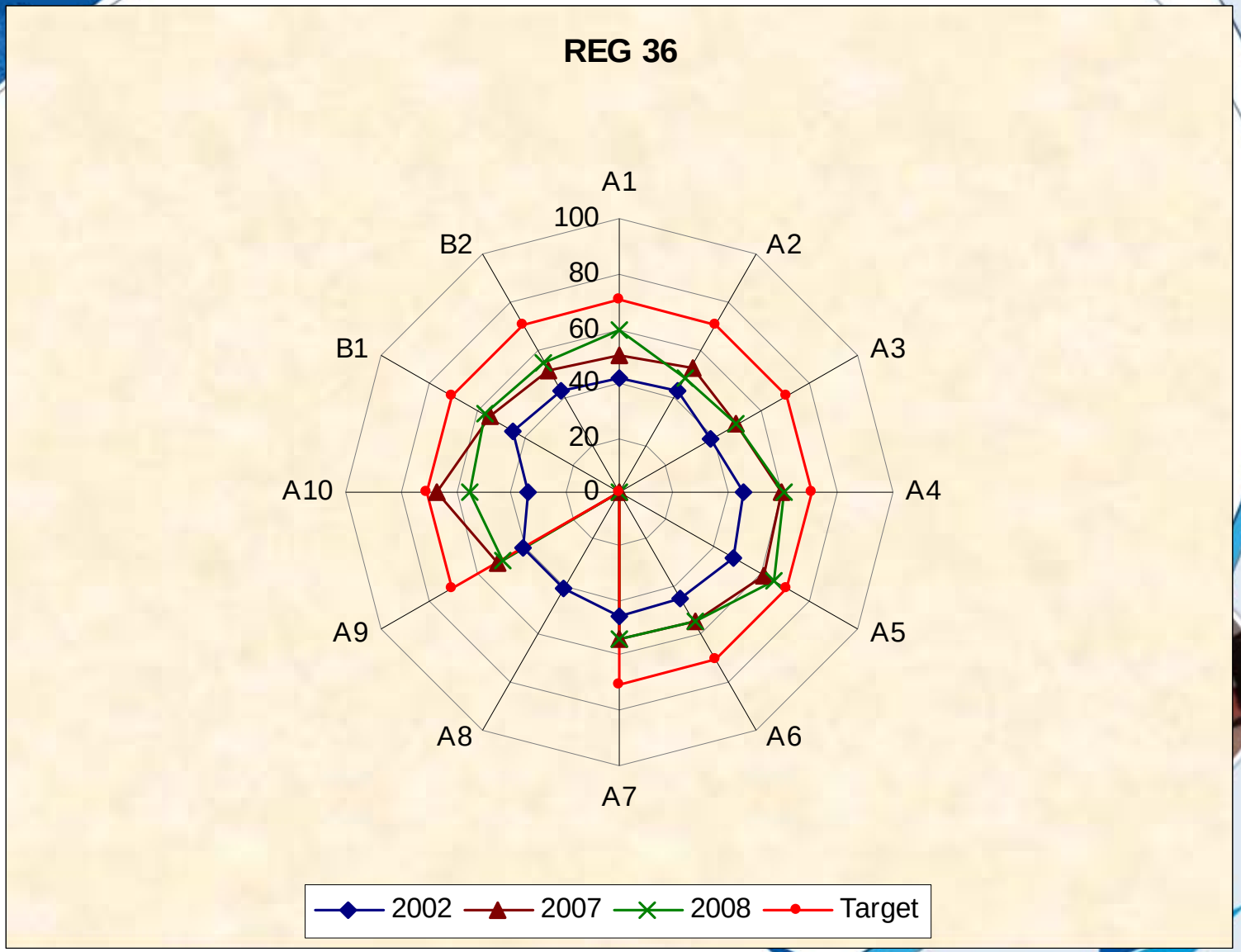

Conclusions

- The current maturity survey is a unique self assessment & but blunt instrument;
- Improvements are being made to harmonise and improve the quality of the information;
- These improvements are being made to make it a global ICAO tool and to be used as a Leading Indicator as of 2010

- Questions please?

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