Standards & Best Practices

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International Regulators' Forum

Standards & Best Practices

Following Montara and Macondo:

- Importance of comprehensive set of standards emphasised
- Drive towards greater consistency of worldwide safe practice
- IRF has a role

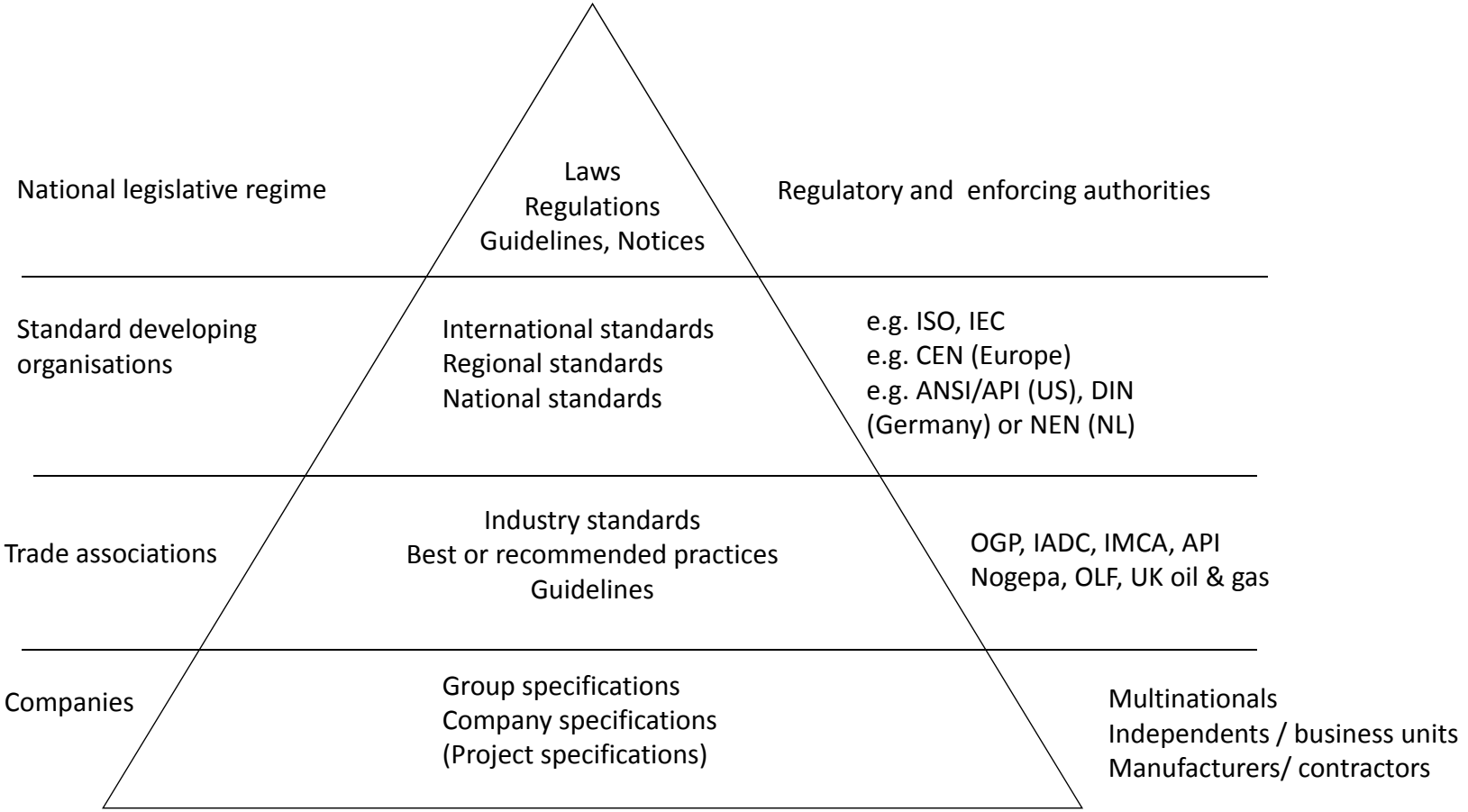
Key benefits of standards for IRF: Promote

- Safety
- Health
- Protection of the environment

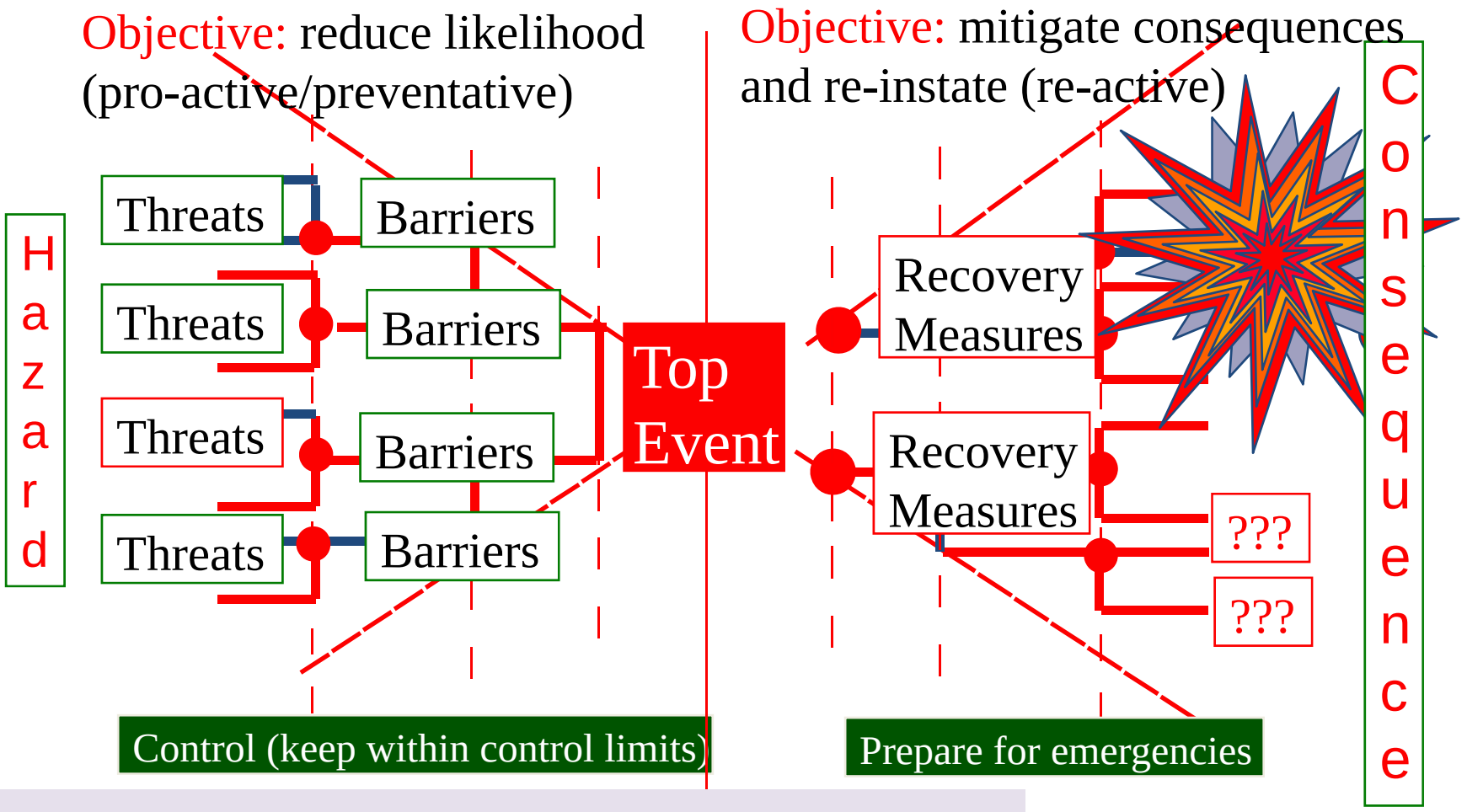
Must be joint effort of all stakeholders

See paper *"The involvement of IRF in setting standards and best practices"* prepared for this conference.

Hierarchy of standards



The bow-tie



Global standards play role in quality and effectiveness of both prevention and mitigation barriers

International Regulators' Forum

Why should regulators be involved?

Because consensus standards can:

- enhance technical integrity
- be alternative to prescriptive legislation
- reduce the need for regulatory document text
- provide a “level playing field” between countries
- enable cross border movement (especially mobile facilities)
- make easier for regulator to amend guidance than amend supporting legislation.

OGP Reports

- Value of standards (OGP Report 440)
- Position paper on development & use of International Standards (381)
- Regulators' use of standards (426)
- Global standards used locally worldwide (4210)
- Deepwater wells (463)

OGP reports freely available at www.ogp.org.uk

Value of standards

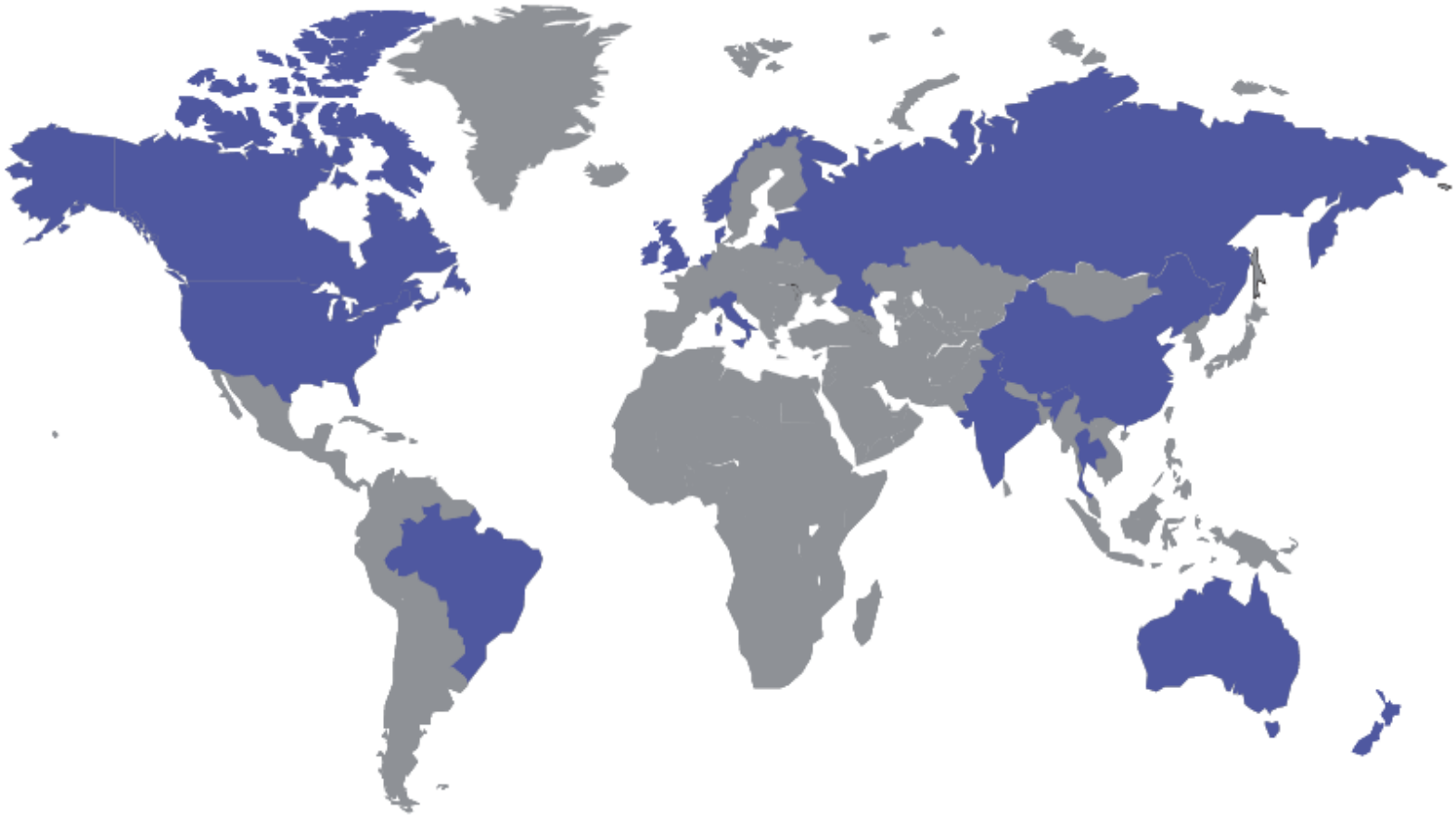
- Standards are the tools we use to organise our technical world
- Quality improvement
- Ensuring consistent and reliable engineering
- Compatibility and efficiency (cost and time reduction)
- Global trade (promotes trading, facilitates partnership and international operation)
- Sharing and dissemination of the knowledge and experience

PS: References by seven global operating companies to more than 5.180 standards.

Position paper

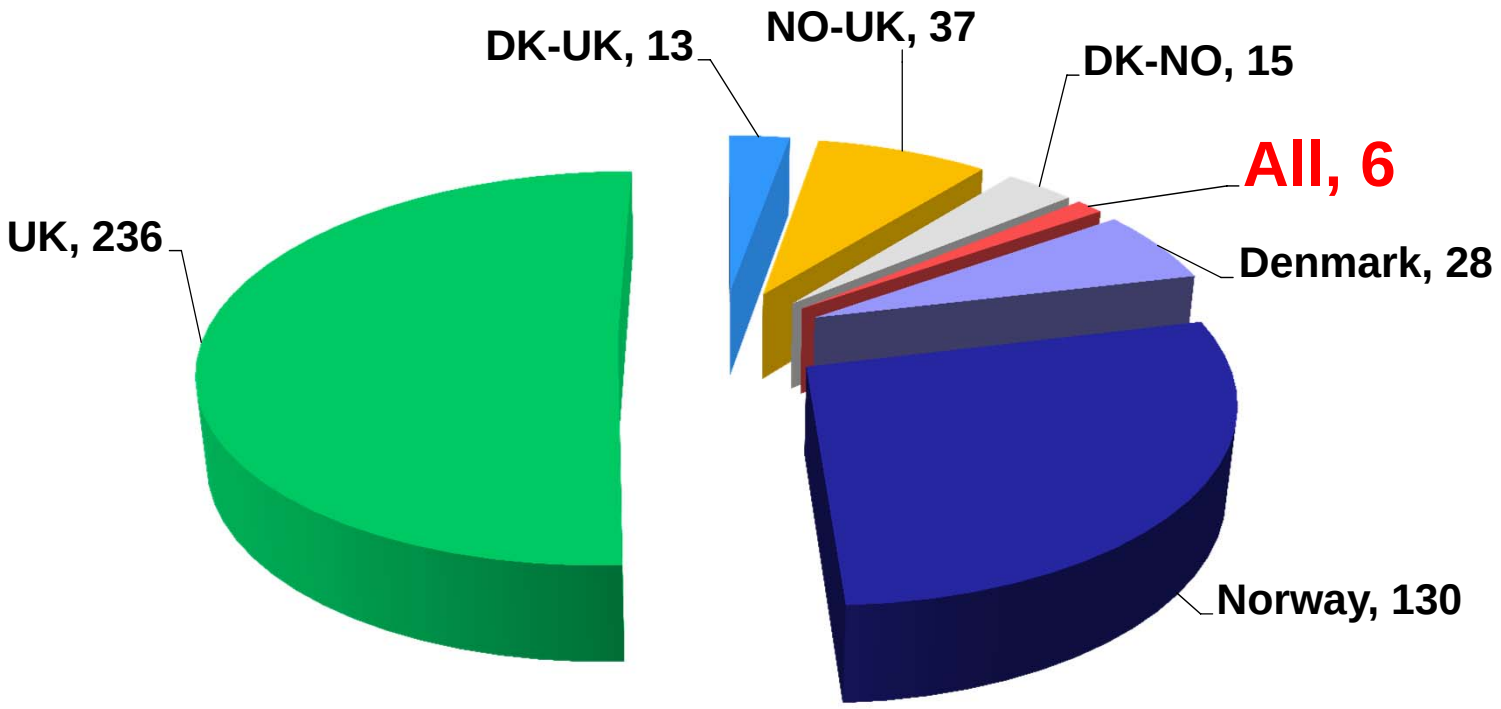
- Promote development and use of international standards
- International standards should be used without modification
- International standards should recognise regional variations
- Avoid duplication of effort
- Company specifications should be minimised
- OGP encourages its members to be well represented on all critical standardisation work groups

Regulators’ use of standards



Thirteen national regulators' examined with focus on the offshore petroleum industry.

Danish-Norwegian-UK references



DK+NO+UK reference 465 standard titles in total

Only 6 common (all) references

Conclusion on Regulators' use of standards

- Regulators make good use of standards!
- Little harmonization by regulators in their use of standards.
- Diversity of references provides additional work for global operators.
- Majority of reference standards from US.
- Duplication of standards.
- References to international standards have increased compared to earlier analysis.

OGP GIRG Recommendations

- Promote international standards
- Robust standards and practices are critical to prevention of accidents
- Enourage OGP members to meet or exceed and verify adherence to these standards.
- Recognise existing standards as the baseline for industry improvement.
- Promote use of industry good practices and standards as a basis for continuous industry improvement with additional GIRG recommendations.
- Influence and renew ISO, API and other industry standards.
- Harmonise international and national standards.
- Support ISO/TC67 efforts following Montara & Macondo.

- Encourage regulators to participate actively in international standards work and to make references to more globally relevant standards.

ISO/TC 67: Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries

Scope: Standardization of the **materials, equipment** and offshore structures used in the drilling, production, transport by pipelines and processing of liquid and gaseous hydrocarbons within the **petroleum, petrochemical and natural gas industries**.

Excluded: aspects of offshore structures subject to IMO requirements (ISO/TC 8).

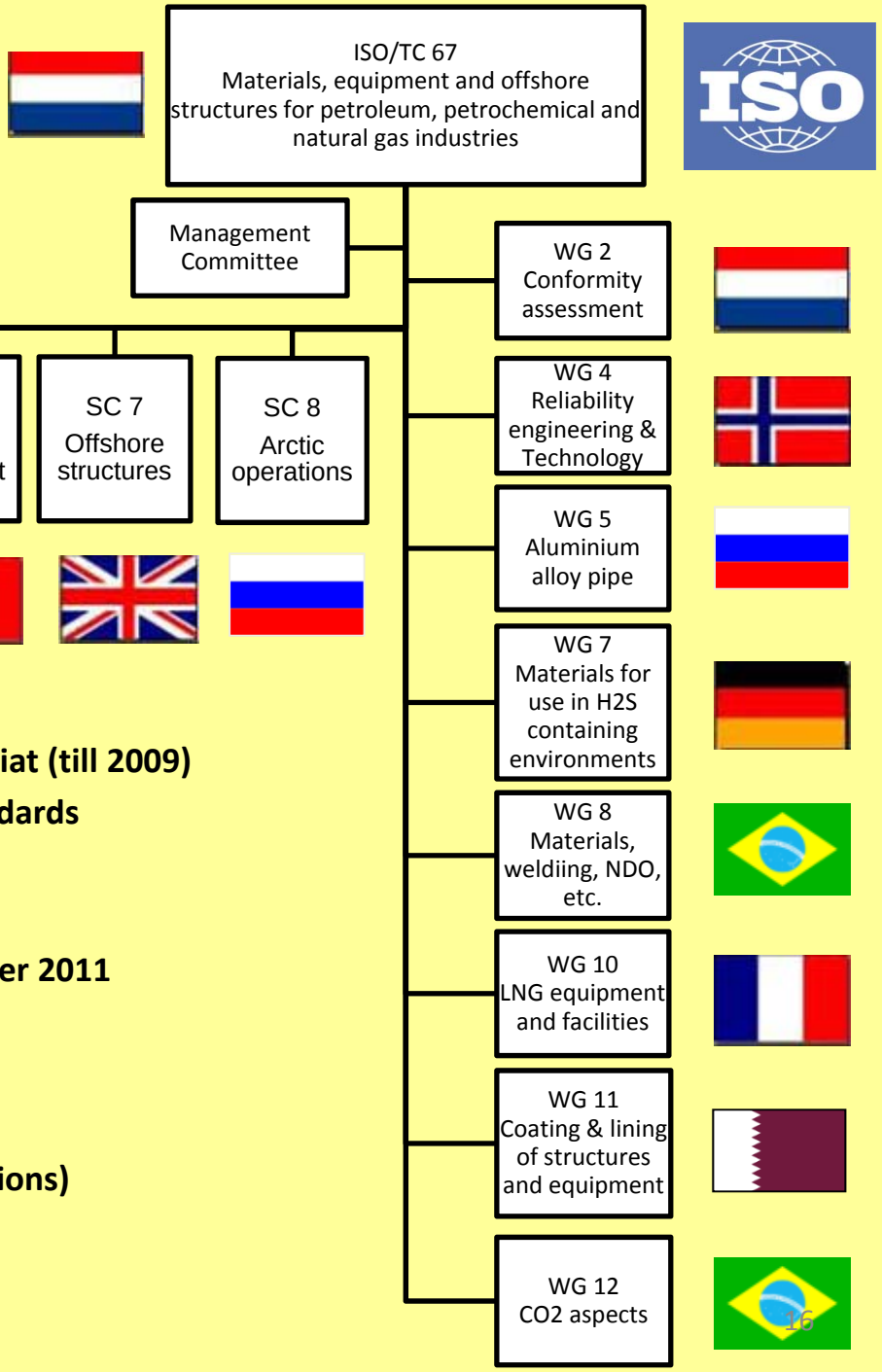
www.iso.org

ISO/TC 67 Vision

Goals of ISO/TC 67

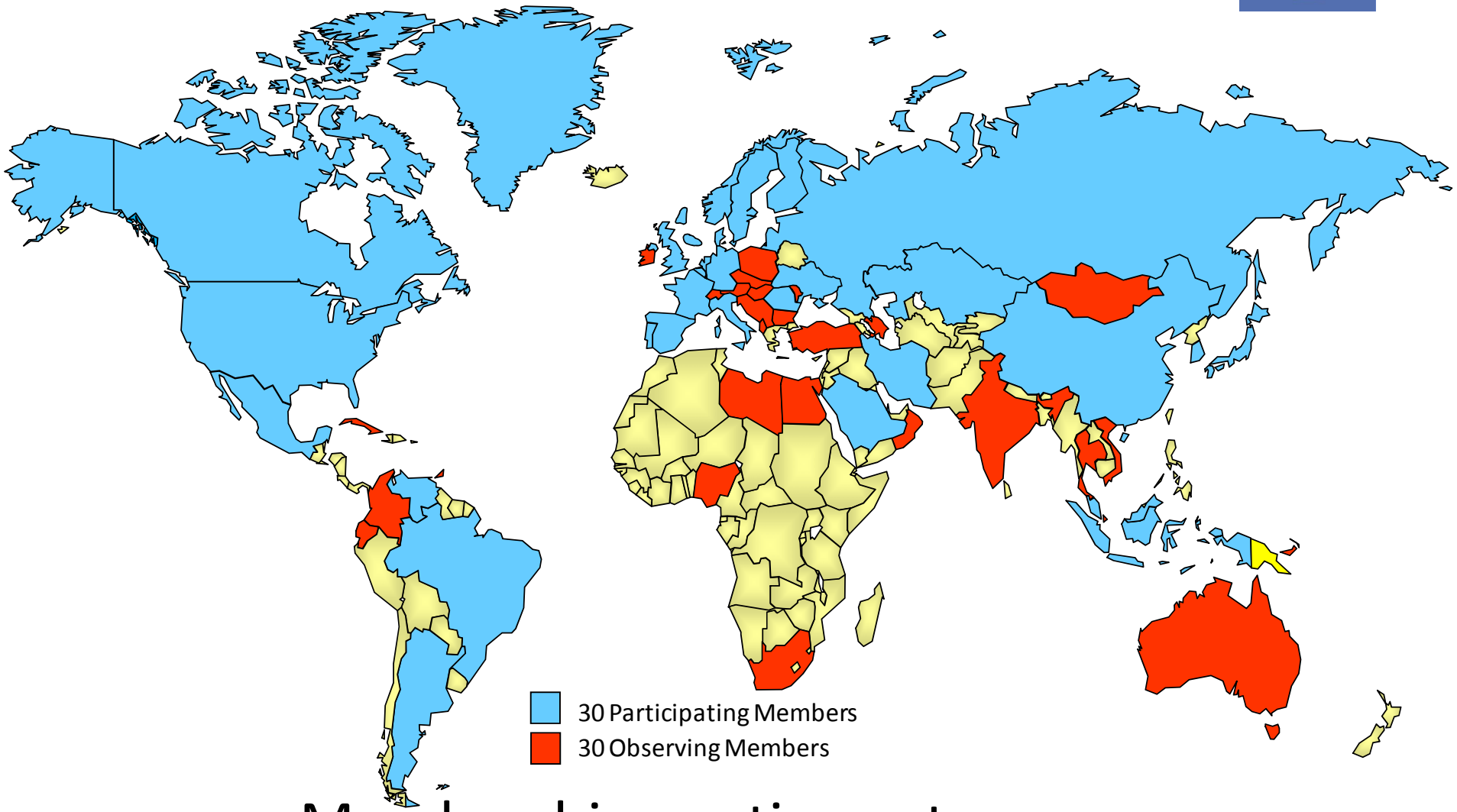
- Prepare standards required by this industry
- Prepare standards that are adopted worldwide by bodies such as ABNT (Brazil), API (USA), CEN (Europe), GOST R (Russian Federation), GSO (Gulf Region) and SAC (China)
- Prepare standards that are recognized by regulators
- Publish standards that enable companies to minimize their specifications
- Deliver standards to the target dates on the agreed work programme

ISO/TC 67
Organisation and secretariats (flags)



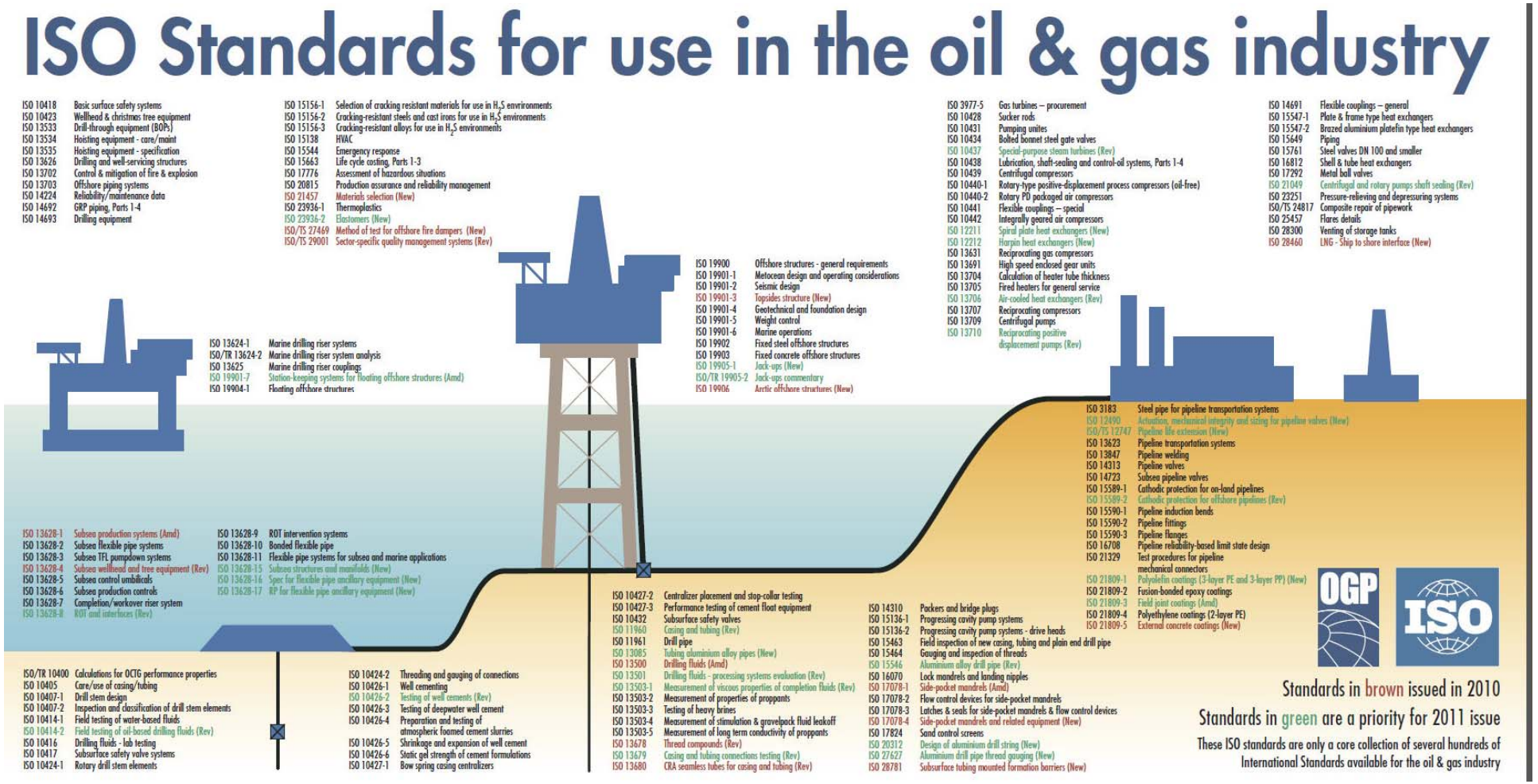
- **Re-established in 1989 with ANSI/API holding secretariat (till 2009)**
- **Initial work program was based on approx 70 API standards**
- **60 Member countries: 30 participating, 30 observing**
- **Involves more than 3000 engineers around the globe**
- **Last annual plenary meeting, Moscow, 14,15 September 2011**
- **Next annual meeting, Rio de Janeiro, September 2012**
- **MC meets three times per year, plus monthly telecons**
- **Published standards: 151**
- **Current work programme: > 95 standards (new + revisions)**
- **Growth in LNG, CO2, arctic.**

ISO/TC 67 Country members



Membership continues to grow

ISO Standards for use in the oil & gas industry



ISO/TC 67 has published 151 standards.

API has adopted 80 of these as joint API / ISO standards.

CEN has adopted 136 of these as joint European EN ISO standards.

Brazil (31), China (55), Gulf Region (78), Kazakhstan (89), Russia (30) etc. have also adopted (a number of) these as national standards. Recent and accelerating.

Companies use these as the basis for their company standards

Key principles

One country – one vote:

- But almost all decisions, including document publication are based on consensus

Consensus:

- Not unanimity, ... but absence of sustained opposition to substantial issues by important stakeholder

Tripartite participation:

- 40% users (oil companies)
- 40% manufacturers/suppliers
- 20% academia, regulators, certification/classification bodies, trade unions etc.

Voluntary:

- A standard does not in itself impose an obligation upon anyone to follow it
- Such obligation may be imposed by legislation/regulation or contract

Verbal forms:

- *Shall* indicates a requirement
- *Should* indicates a recommendation
- *May* indicates a permission
- *Can* indicates a possibility

Regional annexes

- Can meet the particular requirements of one region or country

Equipment versus process standards

- Initial focus on equipment standards – now increasingly also standards for processes

Documented in ISO/IEC Directives (Parts 1 and 2)

Response to Macondo and Montara

ISO/TC 67 is reacting to the Macondo (US) and Montara (Australia) accidents:

- Prepared action plan including immediate and longer term needs (ISO/TC67 document N 1119) – December 2010.
- 30 ISO standards (new and revisions) of which 10 are top priority (Well integrity; Well control / equipment; Cementing; Development and implementation of HSE management systems; Competence of personnel
- Working closely with all actors involved including API, IRF, CEN, NSOAF, OGP (standards committee and wells experts group), ….
- The learnings from an accident in one country must be transferred globally.
- International standards developed by ISO/TC 67 are one way of achieving this.
- Stakeholders are requested to support and participate actively.
- An action team is monitoring progress.

IRF participation

Regulator is key stakeholder

More participation from regulators welcome

Specifically:

- Framing the portfolio of required documents
- Ensuring document scopes are relevant
- Debating detailed content on key issues

Concluding proposals

(See details in paper)

1. Support the ISO (and IEC) standards system
2. Create a standing IRF "standards" sub-group
   - set clear priorities
   - monitor progress
   - engage with standards committees
   - influence standards management to meet IRF needs
3. Develop questionnaire for IRF members (standards usage)
4. Consider response to OGP Report "Regulators' use of standards"; and consider making "list"
5. Distinguish roles on "Good practice" and "Best practice"

Thank you

Back-up

Doc TC67 – N 1119 – extracts

ISO/TC 67 Management Committee AHG Industry Events
Action Plan on Recent Industry Events

Table 1:
Proposed ISO/TC 67 programme for drilling, well construction and well operations standards, resulting from the Montara and Macondo accidents

Number	Title	Latest edition	Status	Proposed ISO/TC67 action	Priority
ISO/TC67/WG2 – Conformity assessment					
No number	Competence of personnel		Sourced from Recommendations 62 & 63 of Montara report	As quoted in the Montara report: "Consider how to address the international standards implications of the following issue: Licensees, rig operators and relevant 3rd party should develop well control competency standards for key personnel in other entities involved. Achievement and maintenance of well control should be written into the job responsibilities of key personnel". See also ISO CD 10018.	1
ISO/TC67/WG4 - Reliability engineering & technology					
ISO TR 12489	Reliability modelling and calculation of safety systems		Planned issued end 2011	Proceed standardization activities as already planned	2*
ISO/TC67/SC3 – Drilling and completion fluids, and well cements					
ISO/TC67/SC3/WG2 – Cementing					
ISO 10426-2/ API Spec 10B-2	Testing of well cements	2003/ 2005	ISO in revision	Fully reconsider the in-situ test situation. This part of ISO 10426 specifies methods and gives recommendations for the testing of cement slurries and related materials under simulated well conditions.	1*
ISO 10426-3/ API	Testing of deepwater well	2003	Published in 2003	Consider revision	2*

...etc ...

NORSOK Z-013	Risk and emergency preparedness analysis	2010		Propose to make new sector specific ISO standard based on NORSOK Z-013, building on ISO 31000. Check gaps/overlaps with ISO 17776	1
IMO MODU Code	Mobile Offshore Drilling Units	2009		Consider whether to approach IMO to propose that this MODU Code should make references to relevant ISO standards from ISO/TC67/SC6/WG1, instead of the provisions in the code. This will align the requirements for drilling plants on fixed and mobile installations.	2
ISO/TC67/SC7 – Offshore Structures					
ISO/TC67/SC7/WG5 – Floating systems					
ISO 19901-7	Stationkeeping systems for floating offshore structures and mobile offshore units	2005	In revision	Ensure standard adequately covers the stability of the drilling vessels, and that the vessel's movements (intact or in damage condition) nor ultimate capsize could not harm the drilling riser.	2*
Miscellaneous					
OGP Report 435	Safety culture	2010	Interim report from National Academy of Engineering and National Research Council, 2010-11-16	Liaise with OGP to explore ways to establish international standards (arrange workshops) to foster continuous improvement in safety culture.	1
Determine need for potential new Work Group	Inspection. General approach to in-service inspection			Consider what is generically needed to be documented in international standards, and how to address; specifically in relation to in-service inspection. Discuss at next ISO/TC67/MC meeting.	2

Table 1 lists 30 items

from the conclusion

To carry out the activities proposed in Table 1 will require considerable effort and resources …

Some of these activities can be seen as typical ongoing work of ISO/TC 67 …

Other proposed potential subjects are new…… these will require new resources from the interested stakeholder groups …

These stakeholder include: countries involved in the international oil industry; oil companies; equipment manufacturers; contractors; national regulators; certification bodies; professional and trade associations; standards organizations

ISO TC67 with OGP, API …

Timetable of priority 1 documents (today)

PRIORITY 1

STANDARDS OVERVIEW

	Working group		Deliverables	2011 Q3	2011 Q4	2012 Q1	2012 Q2	2012 Q3	2012 Q4	2013 Q1	2013 Q2	2013 Q3	2013 Q4	2014 Q1
1	ISO/TC 67 WG 2	ISO xxxx	Competence of personnel	NWIP										.....
2	ISO/TC67/SC3/WG 2 – Drilling and completion fluids, and well cements - cementing	ISO 10426-2 / API Spec 10B-2	Testing of well cements											
3	ISO/TC67/SC3/WG 2 – Drilling and completion fluids, and well cements - cementing	API RP 65-2 / ISO xxx	Isolating Potential Flow Zones During Well Construction	RP 65-2 ok	ISO xx ?									
4	ISO/TC67/SC3/WG 2 – Drilling and completion fluids, and well cements - cementing	ISO 10426-4 / API Spec 10B-4	RP for design and testing of foam cement slurries		decision ?									
5	ISO/TC67/SC4/WG2 – Drilling well control equipment	ISO 13533/ API_Spec 16A	Drill through equipment (BOPs)			api			iso					
6	ISO/TC67/SC4/WG2 – Drilling well control equipment	ISO xxxxx / API RP 53	BOP equipment systems for drilling wells			api			iso					
7	ISO/TC67/SC4/WG4 – Production equipment	ISO 16530	Well integrity in the operational phase											
8	ISO/TC67/SC4/WG4 – Production equipment	new	Well integrity - Umbrella document	new TF is agreed										.....
9	ISO/TC67/SC4/WG x – Well Integrity	API RP 96	Deep water well design considerations			api			iso					
10	ISO/TC67/SC4/WG6 – Subsea equipment	ISO 13628-8 / API 17H	Remotely operated tools and interfaces on subsea production systems											
11	ISO/TC67	OGP 210	Guidelines for the development and application of HSE management systems	NWIP										
12	ISO/TC67/SC6/WG 1 – Processing equipment and systems – Offshore platform systems	NORSOK Z-013	Risk and emergency preparedness analysis											
13		OGP Report 435	Safety culture											