

8th ABLOS CONFERENCE 2015

UNCLOS: ADVANCES IN MANAGING THE BLUE WORLD

ABSTRACTS

TUESDAY 20 OCTOBER

SESSION 1

Gilles Bessero, Director, International Hydrographic Bureau
The International Hydrographic Organization, UNCLOS and Advances in Managing the Blue Planet

Sunil Bisnath, Chairman of ABLOS
The International Association of Geodesy and UNCLOS

Annick de Marffy-Mantuano
The Law of the Sea and Acidification of the Oceans

The changes in the marine environment due to the acidification of the oceans are having significant impacts on marine ecosystems, particularly on the shells populations like crustaceans and corals reefs which play an important role in the food chain. The consequences on the livelihood of millions of people who are dependent on fisheries for their living, are very substantial. The ocean acidification could undermine the social, economic and environmental pillars of sustainable development.

Steps have already been taken within international forums to understand what would be the social and economic consequences as well as to look for actions to prevent the increase of the level of acidification.

There are no current international instruments which specifically address ocean acidification or its impacts on the marine environment. At the global and at the regional level there exists, however, a number of international instruments aiming at combating different sources of pollution which affect the marine environment. This could be of relevance in addressing some ways to prevent the increase of the acidification of the ocean. In addition, a number of declarations or instruments of a voluntary nature, in which States have committed themselves in taking actions or meeting policy goals and targets, are also significant.

The presentation will focus on both the existing legal instruments which could reduce pollution in the marine environment as well as the policies framework which have set up recommendations and objectives for States to follow.

Daher Djama
Toxic Waste Dumping and its Environmental Impacts

The 2005 Tsunami that reached the Somali coastline brought up toxic waste that had been dumped off the coast of Somalia. This had severe consequences for the local

population. Children were born with birth defects. A lot of young people died. Adults suffered from respiratory diseases. In addition, the fish stocks were negatively impacted, which had in turn again serious health repercussions for the local population. How do we prevent such environmental destruction from happening? How can we help to preserve maritime resources in the aftermath of such events? This presentation will tackle these issues through an in-depth discussion of the Somali case.

SESSION 2

J. Ashley Roach

The Work of the ILA Committee on Baselines under the International Law of the Sea 2008-2015

The International Law Association established the Committee on Baselines under the International Law of the Sea in 2008, under the Chairmanship of Judge Dolliver Nelson (UK) and Rapporteur Coalter Lathrop (USA), to study the regime of the normal baseline (article 5 of the Law of the Sea Convention). A comprehensive report on the normal baseline was adopted in 2012 at the ILA's biennial conference in Sophia.

The Committee's mandate was expanded in 2012 to address straight baselines, archipelagic straight baselines, and bay and river closing lines, under the Chairmanship of Captain J. Ashley Roach (USA) and Professor Donald Rothwell (Australia) as Rapporteur. An interim report examining the regimes of straight baselines (article 7) and archipelagic straight baselines (article 47) was adopted in 2014 at the ILA's biennial meeting in Washington DC. That report noted the lack of comprehensive data on relevant state practice.

In 2015 several studies were conducted analyzing the practice of all coastal, island and archipelagic States, and collecting publicly available diplomatic protests of straight baseline claims.

The 2012 and 2014 reports and the 2015 studies are all available on the Committee's website, <http://www.ila-hq.org/en/committees/index.cfm/cid/1028>. The presentation, with illustrations, will summarize these documents. Christopher Carlton (UK) will make the presentation on behalf of Captain Roach.

Juan Carlos Báez

Coast-line Estimation from Satellite Images and in-situ GNSS Observations, for Baseline definitions

The Chilean Continental Shelf Project Unit is preparing its submission to the Commission on the Limits of the Continental Shelf, backed by number of different research studies. Due to the long Chilean coast, its dynamics and cartographic products; most of them based on an old local datum definition; the geodetic team is preparing a coastline estimation by means of high resolution space borne optical images and SAR observations and Digital Surface Models, obtained from radar stereo pairs, including in-situ field surveying and ground control points determination throughout GNSS technologies. They allow to extract a complete coastline, with adequate precision for modern global geodetic datums, like WGS84, which are

compatible with global navigation based on artificial satellites. Our semi-automatic approach is based on techniques for image enhancement and edge detection. A processing chain was developed that allows straightforward processing, which is independent of the study area. All of the results fully comply with technical aspects in relation to baseline estimations and definitions. Procedures and methodologies were adjusted which are in state of the art of geodetic surveying. This paper shows results from different areas in Chile.

Sobar Sutisna, Tri Patmasari, and Eko Artanto

Archipelagic Baselines to Archipelagic Baselines Method Used for EEZ Boundaries Delimitation between Indonesia and the Philippines

The negotiations over maritime boundaries between Indonesia and the Philippines have concluded in the form of EEZ boundary delimitation between the two countries stretched of more than 600 nm length based on their designated archipelagic baselines. In accordance to Article 47 UNCLOS, both Indonesia and the Philippines are satisfied the tests for its geographical configuration and mathematical ratios to be archipelagic states.

The negotiation considered to use delimitation method based on archipelagic baselines to archipelagic baselines construction after a long discussion on formulating a principles and guidelines to be used in negotiation, and then adjusted by certain parameters in order to reach an equitable solution accepted by both sides as the best alternative negotiation agreement. From the point of view of technical aspects of UNCLOS, the outcome of the said agreement may contribute a valuable development to update the next TALOS edition, in particular on a sample use of archipelagic baselines to archipelagic baselines principles in the construction of maritime boundary delimitation. This paper will discuss our experiences with the Philippines in the delimitation of EEZ boundaries in the Sulawesi and the Philippines seas, seen from technical aspects point of views.

SESSION 3

Fiona Bloor

Development of Charting in Relation to Maritime Zones and Limits

This paper is aimed at people who are new to technical aspects of Law of the Sea particularly concerning navigational charts and maritime zones and limits. There have been significant developments over a relatively short period in the use and application of charts for technical aspects of law of the sea and, more particularly, how charts are part of the effective of a State's management of maritime space. Charts from various sources are used today for management and research, so, to provide an introduction to some of the issues that have arisen, this paper will look at how the use and depiction of maritime zones and limits has changed. Examples and practice will concentrate on sources at United Kingdom Hydrographic Office but will also touch on other publicly available sources.

Sobar Sutisna

Geodetic Datums in the Treaties of Indonesia–Singapore Maritime Boundary Delimitations: How to Mix Apples and Oranges?

In the era when precise navigation of vessel (sub-meter level accuracy) is possible with the utilization of ECDIS and DGPS positioning system, the need for certainty geodetic datum of maritime boundary coordinates is essential. Geodetic datum of maritime boundary delimitations between Indonesia and Singapore in the Strait of Singapore were analysed. In resolving maritime boundaries delimitation between Indonesia and Singapore which had been concluded in 1973, 2009, and 2014, there were interesting technical aspects of geodetic datum used in those three epochs of treaties on territorial sea boundaries. This paper will discuss our experiences in managing geodetic datum differences inherited in one treaty and others. It's just look like mixing apples and oranges.

Mark Alcock, Matthew McGregor and Grant Boyes

The Universal Digital Marine Cadastre, The Foundation for Efficient Administration of the World's Ocean Spaces

The concept of the marine cadastre has its roots in the terrestrial land cadastres used to manage property rights and land planning information on land. Land cadastres evolved in recognition that economic development required certainty of tenure; transparency in the restrictions to development that applied to that tenure and centralised discovery over the rights and restrictions. The concept of the marine cadastre is evolving to respond to the same demands in manner appropriate to the very different physical reality and rights framework of the seas.

Development of the marine cadastre is occurring at a period where the complexity and intensity of ocean use and associated regulation is growing at an unprecedented rate. Concurrently, changes in positioning and information technology are driving whole of society changes in the way that people access and consume information. The marine cadastre must be designed from the outset to anticipate the technical opportunities presented by the evolving digital economy and the complex operating environment in which it is being established. It must be legally authoritative, geodetically precise, and fundamentally digital from the outset. Reflecting the marine and digital economies that it supports, it must be seamlessly interoperable across national jurisdictions. It must aspire to be universal.

Development and deployment of the Universal marine cadastre model will facilitate the management of the World's oceans at a national and global level. It will enable the management of ocean resources to extend beyond a sectoral or national approach. It will improve the speed, transparency and quality of decision-making; and, reduce compliance and enforcement cost by delivering a common authoritative operational picture to all ocean users. It represents a missing element in the administration of the oceans

The development of the marine cadastre represents a once in a generation opportunity for hydrographic and other marine professionals to contribute their specialist skills and experience to the management of the World's oceans. International organisations such as the IHO are uniquely placed facilitate the development and maintenance of the marine cadastre through initiatives already in place such as the IHO S-100 standards framework.

In this paper the authors discuss the necessary elements and principles needed to establish a robust, interoperable and cost effective marine cadastre framework that builds upon existing initiatives and is suitable for deployment across both developed and developing States.

WEDNESDAY 21 OCTOBER

SESSION 4

Vasco Becker-Weinberg

Marine Spatial Planning in the European Union: Facing the Inevitable

In recent years the European Union (EU) has taken significant steps to promote marine spatial planning (MSP) as a valuable tool to achieve sustainable ocean governance, taking foremost into consideration the two fundamental aspects that characterize the maritime space and differentiate it from land: its interconnectivity and its tri-dimensionality. Indeed, the preamble of the United Nations Convention of the Law of the Sea acknowledges that “the problems of the ocean space are closely interrelated and need to be considered as a whole.”

Very recently, the efforts of the EU in this field culminated in the approval of Directive 2014/89/EU of the European Parliament and of the Council on 23 July 2014, establishing a framework for MSP.

While very few Member States already have legislation on MSP, the Directive now requires Member States to implement legislation within a specific timeframe, and in accordance with the Directive.

This significant step by the EU will necessarily raise important legal questions that have not so far been widely discussed within EU institutions or amongst Member States. For example, the EU has referred to the need for a predictable legal regime dealing with MSP, internal coordinating structures for maritime affairs, the need to address duplication of regulatory powers of different national or regional authorities, and the need to replace overlapping and double-track decision-making by a one-stop-shop approach. Yet, these and other issues remain within the competence of Member States. As a result, it seems inevitable that certain measures must be adopted, and those measures must take into account the challenges that result from cross-border cooperation and activities and the subsequent need for harmonization of procedures to ensure predictability. These could include, for example:

- a) Mapping offshore activities at a European level, without creating a European maritime plan or developing management actions at the EU level;
- b) Implementing coordination mechanisms and possibly building a network of relevant national authorities, addressing issues arising from the exercise of jurisdiction and granting of rights for the development of genetic resources, or for offshore activities in the outer continental shelf and potentially in areas of interaction with areas beyond national jurisdiction;
- c) Preventing potential anti-competitive practices between Member States to attract investment in offshore activities, especially when considering the significant disparities within the EU (for example, although Portugal’s maritime space is several times larger than that of Belgium, the sea-economy in Belgium represents around

30% of the GDP, while in Portugal is less than 3%).

This paper will address the ways in which these challenges might be met in practice, taking account the existing EU and international legal frameworks, as well as solutions already adopted in national legislation of Member States dealing with MSP. It will focus in particular on the interaction between different levels of jurisdiction and on possible solutions which could be implemented in national legislation of Member States.

Tavis Potts,

Bringing Ecosystem Services into Marine Management Decisions in the Firth of Forth, Edinburgh, Scotland

The marine environment is under increasing use, putting pressure on ecosystems and intensifying competition for space amongst maritime activities, such as fishing and tourism. Further activities, such as large scale offshore renewable developments, may change the benefits that society and businesses receive from coastal and marine systems. Increasingly the concept of ecosystem services (ES) is used in policy debates to explore and identify such trade-off's in marine spatial planning, however, in reality practical implementation of the ecosystem services approach with marine industries and users is relatively rare.

A process is needed which integrates ecological assessments of changes with stakeholder perceptions and valuations of trade-off's and balances ease of application with the ability to deal with complex social-economic-ecological issues. This interdisciplinary project responded to this challenge in light of strong policy drivers to incorporate an ecosystem services approach into MSP at the national and regional scale. The project "CORPORATES" investigated the use of Ecosystem Services (ES) concepts in marine management decision-making by bringing together marine renewable energy industry and regulatory/advisory partners to exchange knowledge with a range of stakeholders from the fishing and tourism industries and NGOs. Ecological, economic, socio-cultural and legal experts have used the data to develop a framework for stakeholder engagement in a process for assessing service tradeoff's around large scale offshore wind in the Firth of Forth region (Edinburgh, Scotland) and how this process fits with existing regulatory and policy requirements. As understanding increases of how ES interact and effect economic and social values, resulting improved policy approaches in MSP can reduce the risk of conflicts and support rational planning of marine spaces.

Robert Van de Poll, Pieter Bekker and Clive Schofield

Extending the Role of UNCLOS in Managing the Blue Planet: Applications to International Lakes

The international law of the sea, as codified in the United Nations Convention on the Law of the Sea (UNCLOS), is commonly understood to relate to the world's ocean spaces. There are, however, broad areas of landlocked waters that are shared among multiple riparian States which are disconnected from the world's oceans (save by rivers or canal systems): international lakes. Examples include the Caspian Sea (involving Azerbaijan, Iran, Kazakhstan, Russia and Turkmenistan), North America's Great Lakes (Canada and the USA) and the African Great Lakes system (Burundi, Democratic Republic of Congo, Ethiopia, Kenya, Malawi, Mozambique, Rwanda,

Tanzania, Uganda, Zambia, Zimbabwe). These significant inland parts of the ‘Blue Planet’, whilst not part of the oceans, have analogous features including overlapping claims to waters and the need for international lake boundaries to be delimited. Indeed, among the 29 potential international lake boundaries outlined above only eight have been delimited. This can be set against the backdrop of growing interest in lake resources, including the competitive issuing of oil and gas exploration blocks. Increasingly the States concerned are looking to the abundant experience that exists for the delimitation of boundaries offshore for inspiration in the delimitation of international “maritime” lake boundaries. This raises the question of the legal status of international lakes and whether the international law of maritime boundary delimitation is applicable, by analogy or otherwise, to lake boundaries and if so, to what extent. The paper examines past practice, present challenges and future opportunities in this context, including through case study review and an analysis of the pertinent maritime delimitation case law as developed by international courts and tribunals.

SESSION 5

Venilla Rajaguru

Securing Rights by Artificial Islands: State Assets vs. UNCLOS Jurisdiction in the South China Sea

My paper is on an emerging order of legitimizing sovereignty claims to strategic oceanic passages and natural resources in the South China Sea by constructing artificial islands as state owned assets at sea. Though artificial islands such as oil production platforms, land formation and land reclamation sites are not recognized by the treaty law of the United Nations Convention of the Law of the Sea (UNCLOS) as legitimate contenders to geodetic border construction, fixed island structures are serving as the *techne*’ or as technical agents of asserting national property rights at sea. Artificially formed islands are technological spaces, parts of a national infrastructure of coastal extension and airspace expansion, the most controversial of which are known to be the ones that are intended to be uninhabitable by humanity. In this paper, I use the case of the emerging constructions of China’s sandy land formations in the Spratly archipelago of the South China Sea to explore a set of critical questions on the notion of power of the rule of international law and order vis a’ vis the inventive alternative of evading compliance, often termed “beyond compliance” (Teitel & Howse, 2010; Kent, 2007; Scott,1998).

There are two parts to my analytical discussion on the emerging order of securing national rights over water, seabed and natural resources.

Part I will discuss the epistemological issues of the art and craft of inventing islands as national constructions of generating a new order of political power and legal narrative of jurisdiction and defence. This part of my discussion will focus on an area of little research inquiry so far, i.e. on an emerging order of building power base by using common resources such as sand, water, and oceanic hydrology for the purpose of land formation at sea. Part II will concentrate on discussing questions on legitimacy of these artificial islands and issues related to international and multilateral compliance to treaty laws. The interconnected corollary of questions to be discussed in this part of the paper can be outlined as follows: are the artificial islands creative instruments of national power that highlight the need for multilateral cooperation on

joint development of natural resources among maritime states? Or are these islands symbols of national transgression of multilateral trust, breaching an international treaty law, that of the Law of the Sea? What standards of control and compliance are historically constructed, and what are the standards that are politically negotiated? Is technological supremacy deterministic in securing sovereign rights rather than treaty rules of compliance?

Both parts of my paper are situated within the broader context of international relations and international security, interconnected with the epistemic categories of law and inventing islands for controlling resources and the seas.

Youna Lyons, Denise Cheong, Mei Lin Neo and Hui Fung Wong

States' International Rights and Obligations in the Race for Giant Clams in the South China Sea

What seems to be an unprecedented wave of overharvesting of giant clams from the South China Sea (SCS), has made the headlines of several newspapers. The target species includes the *Tridacna gigas* - the world's largest living bivalve - valued not only for its meat which is a delicacy in Asian cuisines; their shells are increasingly being used as a substitute for ivory to produce large intricate carvings. Consistent with this view, are satellite images that reveal isolated dredge marks on numerous areas of sandy reef flats, a typical habitat for these giant clams which also happens to be an Appendix-II listed species under the Convention on the International Trade of Endangered Species (CITES).

To support the conclusion that States must ban any further harvesting of giant clams in the SCS and assess its remaining populations prior to adopting adequate management measures, the paper (i) examines the significance of where giant clams are located (within or beyond 12NM of an island) and the combined application of environmental provisions of the United Nations Convention on the Law of the Sea (UNCLOS) and CITES to protect threatened and endangered species, including the requirements relating to semi-enclosed seas such as the SCS; and (ii) discusses the application of the obligation of restraint, precautionary approach and due diligence under international law, in light of giant clam ecology, data patchiness on their distribution and abundance within the SCS, and evidence to suggest that population levels may be reaching a tipping point.

Andrew Serdy

The Outer Limit of Bangladesh's Continental Shelf after the Delimitation of its Boundaries with its Neighbours: Is There Still Any Role for the CLCS?

Bangladesh, located between India and Myanmar, has had its continental shelf boundaries fully delimited now that an award has been handed down in 2014 by the Annex VII tribunal in the Bay of Bengal Maritime Boundary Arbitration (People's Republic of Bangladesh v. Republic of India), http://www.pca-cpa.org/showfile.asp?fil_id=2705, complementing the earlier judgment delivered by the International Tribunal for the Law of the Sea in Delimitation of the maritime boundary in the Bay of Bengal (Bangladesh/Myanmar), Judgment, ITLOS Reports 2012, p. 4. The two boundaries meet, thus forming a continuous outer limit for the continental shelf of Bangladesh that abuts the continental shelves of its neighbours but not the international seabed area beyond national jurisdiction. Drawing on relevant

treaty provisions and State practice, the proposed presentation will discuss whether this removes the last legal impediment to Bangladesh's exploitation of the resources of the part of its continental shelf beyond 200 nautical miles from its territorial sea baseline, even though its entitlement to that part of it, the subject of a submission to the Commission on the Limits of the Continental Shelf under Article 76(8) of the UN Convention on the Law of the Sea, has yet to be verified through recommendations made by that body. In particular, it is possible that this verification now need not occur at all.

SESSION 6

Samharn Dairairam

The Equi-Area/Ratio the New Methods for Maritime Delimitation

The Equi-Area/Ratio aims at reducing the vagueness of immediate vicinities, regime of islands, historical titles and special circumstance. These are applied abstractly for adjusting strict median lines. That the Equi-Area/Ratio calculated the median line mathematically will reduce the mentioned vagueness. The Equi-Area/Ratio is two dimension adjustments because this method will be based on equal areas consideration. The Equi-Area/Ratio is proved by testing with setup scenario and real scenario. The setup scenario is a real place and the real scenario is from the International Court of Justice, ICJ, especially case of Nicaragua and Colombia. The result shows that The Equi-Area/Ratio is applicable for maritime delimitation. The most potential of the method is that every feature can be inputted for calculation. As such it addresses the issue of disagreement on selecting features if the Equi-Area/Ratio is applied for maritime delimitation. The Equi-Area/Ratio can be divided into two categories the Equi-Area and Equi-Ratio. The methodology of this Equi-Ratio is totally different from Langeraar's Equi-Ratio. The Equi-Area/Ratio is calculation of total area and sea area.¹ The complicated maritime boundary is from vagueness of special circumstances or historic title. The special circumstance is various interpretations. It is deviated by coastal States to take advantages for drawing median line. Different understanding historic agreement makes the coastal States delineate the maritime boundary differently. The special circumstances and historic title are too subjective to be specific for solving the difference in maritime delimitation. The Equi-Area/Ratio is the optional method for both States. The testing of the Equi-Area/Ratio with the real scenarios, Colombia vs. Nicaragua (in case of offshore features), proves that the Equi-Area/Ratio is applicable for maritime delimitation. The disagreement on selection of features can be solved by the Equi-Area/Ratio method because every feature in the sea can be used as base points for controlling the turning point of provisional median line. The allocated areas of each feature will illustrate whether features are relevant for constructing median line. The provisional area of individual features will be allocated by the Euclidean Allocation analysis. Each allocated area is as input for the Equi-Area/Ratio method. The results of the Equi-Area/Ratio method are the gain area and the lose area. The allocated areas will be adjusted mathematically to meet the equitable solution. Disregarding irrelevant features for reanalysing the Euclidean Allocation should be done carefully because if the irrelevant feature which is disregarded can sustain human habitation or economic life, discounting that feature will against regime of islands.

I Made Andi Arsana, Akhla sabila and Sora Lokita

Evaluating the Three-Stage Approach in International Maritime Boundary Delimitation: A Case Study of Indonesia-the Philippines Maritime Boundary in the Sulawesi Sea

Recent development in international maritime boundary delimitation introduces the three-stage approach as demonstrated in several judgements made by the International Court of Justice and the International Tribunal for the Law of the Sea. This relatively new approach consists of three steps which are constructing provisional line, adjusting such provisional line by considering relevant circumstances, and conducting disproportionality test to ensure that the result does not cause unnecessary inequality. The approach has been generally viewed as bringing higher level of certainty in maritime boundary delimitation process compared to the previous ones, such as the two-stage approach. This paper is aimed at evaluating the three-stage approach to investigate how the approach can be technically implemented to achieve equitable maritime boundary delimitation in different cases. For a case study, EEZ boundary delimitation in the Sulawesi Sea between Indonesia and the Philippines was analysed. The analysis was done by comparing the maritime boundary between the two States concluded on 23 May 2014 and a theoretical maritime boundary resulted from the implementation of the three-stage approach. In other words, this research's aim is to examine and analyse the differences between maritime boundaries based on negotiation and the one based on the implementation of the three-stage approach.

This research found that the differences of maritime boundaries between negotiation and the implementation of three-stage approach, which may be considered as more systematic and clearer, are not significant. This result may lead to a conclusion that the three-stage approach may be chosen as one of the methods to delimit maritime boundary in bilateral/trilateral negotiations, if necessary. Bearing in mind, the parties of the negotiations are free to control the process of the negotiation, including on the method of delimitation.

Robin Cleverly

The Disproportionality Test: Myth or Method?

Courts and tribunals have taken some markedly different approaches to identification of relevant coasts and relevant areas; leading to parties incurring substantial efforts in presenting their own interpretation of relevant coasts and relevant areas in each case, to suit their situation and case objectives. This paper identifies some of the most common issues in dispute.

Meanwhile, notwithstanding the substantial arguments often exchanged, courts and tribunals have to date never been persuaded to adjust a delimitation line to avoid a perceived disproportionality at the final stage of the delimitation process. So is that final stage effectively redundant, or should the role of the principle of proportionality be adapted so as to make it more relevant in maritime delimitation?

Hyunsoo Kim

Maritime Boundary Issues of the East Asian Countries and their Prospects for Resolution

One of the recent trends that can be clearly identified is the establishment of a 200-mile Exclusive Economic Zone (EEZ) by coastal states on the basis of the UN Convention on the Law of the Sea (the LOSC). The present day is characterized as being a practical age, in which states are continuously and gradually claiming and extending their maritime jurisdiction by unilateral or excessive action, enclosing ocean space and natural resources, and thus establishing a new order pertaining to the world's ocean.

In particular, because of the different geographical and political circumstances in the East Asian countries, it is so complicated and difficult to solve maritime boundary matters in those areas. In consideration of this point, the issues of maritime boundaries of the East Asian countries and the perspectives of these countries, especially Korea, Japan, and China, are need to be analyzed and examined not only in the light of the provisions of the LOSC itself, but also in the light of a comparative study through the examination of customary international law, state practice, national legislation, and special circumstances, whether geographical or political.

In particular, unilateral action or measures by one state may significantly affect the maritime interests of other states. Therefore, the most important thing to be done by the states concerned is to faithfully and sincerely consult and negotiate on the issues with each other on the basis of relevant laws and interests. In addition, it is necessary to remember that maritime boundary disputes may ultimately have an influence on regional cooperation and stability, peace and security.

In the case of Korea, Japan, and China, because of the narrow sea area between part of their coasts, the unilateral way of delimiting maritime boundaries of one state may not only attract the grave concern of other states, but also raise difficulties and disputes among the states concerned. Therefore, for the effective solution of maritime boundaries in the East Asian countries, more cooperation, bilateral or multilateral, and better understanding based on the general principles and norms of the LOSC among the states concerned are truly required.

In conclusion, no state can be allowed to have a unilateral share of maritime jurisdiction in semi-enclosed seas such as the East Sea, the Yellow Sea and the East China Sea. Thus, it is expected that considerable time is needed before definite boundaries are drawn in those seas.

SESSION 7

Guillaume Le Sourd

Integration of Maritime Limits and Boundaries in Digital Systems

In recent years the United Nations Division of Ocean Affairs and the Law of the Sea (DOALOS) has moved forward on issues pertaining to the facilities for the custody of the charts and lists of geographical coordinates deposited as well as for the dissemination of such information in order to assist States in complying with their due publicity obligations. In particular, DOALOS has worked on a GIS on maritime limits/boundaries, a web-GIS portal and on the issue of a standardized approach

describing the outer limits of maritime zones and maritime boundaries. The presentation will address these advances.

Mark Alcock, Matthew McGregor and Grant Boyes

An Australian Perspective on the Implementation of a Digital Marine Cadastre

Australia's journey to establishing a digital marine cadastre has its roots in a decision made in the early 1990s to manage and distribute Australia's national baseline and limit information electronically. This decision was driven by expedience, and conviction. Expedience through the need to rapidly publish information to support the issuing of offshore resource titles; conviction being the belief by the senior management of the organisation that in the future all regulation with a spatial content (georegulation) would be delivered and consumed digitally.

In the intervening thirty years, Australia's understanding of what is required to support digital delivery of georegulation has evolved, from a recreation of paper cartographic products depicting regulations in an electronic environment to integrated processes for georegulation development and delivery. At its simplest, the goal of this program is for the digital file consumed by a master of a vessel operating in Australian waters to be not just a depiction of the law, but the legislative instrument itself. The end product of the legislative process must be a product that is readable by a lawyer and directly consumable by a machine.

The challenges of this task are significant. Changes need to be put in place at all stages of georegulation development. Technical standards for creating the spatial elements of regulation need to be established. Legislative drafting styles need to adapt to accommodate the new technical elements. Standards for the electronic depiction of georegulation that are human and machine readable need to be established. Processes need to be put in place for the lodgement and visualisation of the electronic files that will form the end point of this law making process. It is the sum of these processes that will form the marine cadastre. It is the emphasis on the integration of these elements that distinguishes the work in Australia from other States.

It is the purpose of this paper to illustrate the core elements of the Australian program and how these elements can contribute to the development of a universal marine cadastre.

Tilemachos Bourtzis

The Role of Marine Data in Advancing Development

Data gathering in the marine environment in the form of Marine Scientific Research, Environmental Monitoring, Surveying (Hydrographic and Military) and Commercial Research activities is an integral part of the legitimate uses in world's oceans and is for the most part thoroughly regulated, both in the United Nations Convention on the Law of the Sea and other international agreements. Data are collected via a large variety of means and the resulting information can therefore be used for a number of purposes (environmental, security and commercial).

Less common is the systematic subsequent use of data provided by such activities and their application in the formation of public policies and strategies. The need for an

extended use of data for development has been increasingly noted in the international field, more particular regarding the soon to be formally adopted Sustainable Development Goals (Millennium Development Goals Report 2015), and calling for extended data access in what is referred to as “data revolution” (Synthesis report of the Secretary General on the post-2015 sustainable development agenda, UNGA/69/700).

The present paper will focus on the potential role of marine data in a global “blue” development procedure, especially since the inclusion for the first time of a marine related Sustainable Development Goal. References will be made to the institutional tools that can be used for development purposes in the present context, most notably the International and National Data Centers, using the example of a recently developing Data Depository for Biodiversity in Greece, LifeWatchGreece.

THURSDAY 22 OCTOBER

SESSION 8

Finn Mørk, Mikael Pedersen, Niels Andersen and Christian Marcussen

From The CLCS' Recommendations with Respect to the Area North of the Faroe Islands

On 29 April 2009, the Kingdom of Denmark made its partial submission with regard to the continental shelf north of the Faroe Islands to the Commission on the Limits of the Continental Shelf. The Commission adopted its recommendations to Denmark in March 2014, 18 months after a Subcommittee was established to consider the submission. The Commission agreed with the determination of the fixed points establishing the outer limits of the continental shelf north of the Faroe Islands as originally listed in the submission.

Among the main topics for consideration by the Subcommittee was the identification of the base of the continental slope region, in particular along the eastern flank of the Ægir Ridge, which was accepted following a series of presentations by both the Subcommittee and the Delegation. Since the Ægir Ridge was considered a submarine ridge in accordance with Article 76(6) of the Convention, the 350 M distance constraint was applied.

Another discussion topic concerned the sediment continuity from the outermost sediment thickness points to the foot of the continental slope which the Subcommittee accepted only after the submission by Denmark of several additional seismic lines supplemented by gravity data and an annotated sediment thickness map. In this respect, the two parts clearly disagreed as to the interpretation of the relevant parts of the Scientific and Technical Guidelines of the Commission.

Christian Marcussen, Finn Mørk, John R. Hopper, Thomas Funck, Mikael Pedersen, Willy L. Weng, Tove Nielsen

Who Owns the North Pole? – Understanding the Kingdom of Denmark's ECS Submission in the Arctic Ocean

In December 2014 the Kingdom of Denmark filed a submission with the Commission on the Limits of the Continental Shelf to define the outer limits of its continental shelf

in the Arctic Ocean. This partial submission is based on the same principles as used in the four previous partial submissions within the Kingdom of Denmark and based on data acquired by the Continental Shelf Project of the Kingdom of Denmark and publicly available data.

The first step in defining the extent of the continental margin north of Greenland was primarily to analyse existing bathymetric data which led to the definition of the Base of Slope (BOS) region. The conducted geomorphological analysis shows that the seafloor highs in the Arctic Ocean (the Alpha-Mendeleev ridge complex, the Chukchi Borderland, the Lomonosov Ridge and Gakkel Ridge) are located within the BOS region, and therefore are integral parts of the continental margin north of Greenland. The Lomonosov Ridge is a sliver of continental crust that extends for a distance of almost 1800 km across the Arctic Ocean and shares geological characteristics with the land mass of North Greenland. Therefore the Lomonosov Ridge is classified as a submarine elevation that is a natural component of the continental margin of Greenland.

The Gakkel Ridge coalesces with the proper slope north of Greenland. The oceanic origin of the Gakkel Ridge differs geologically from the continental crust of Greenland; hence it is classified as a submarine ridge.

The data available to the Continental Shelf Program of the Kingdom of Denmark do not provide for the classification of the Alpha-Mendeleev ridge complex and the Chukchi Borderland according to UNCLOS Article 76. Therefore only the depth constraint (2500 m isobath + 100 M) originating from the Lomonosov Ridge is utilized and combined with the distance constraint (350 M) to delineate the outer limits of the continental shelf north of Greenland on the Amerasian side of the Lomonosov Ridge.

Mikael Pedersen, Willy L. Weng, Christian Marcussen, Finn Mørk and Niels Andersen

Determination and Long-term Handling of 2,225 Outer Limit Points – The Data Management Strategy of the Kingdom of Denmark

A total of 2 225 points define the outer ECS limits in the five areas around the Faroe Islands and Greenland where the Kingdom of Denmark has prepared partial submissions pursuant to Article 76 of UNCLOS. The points are based on the Gardiner and Hedberg formulae as well as the depth and distance constraints all of which are based on geomorphological, geophysical and geodetic data. Hence, a multitude of logical dependencies exist and any data revision will inevitably have big consequences on related geographical points and on their representation on maps, figures and tables, which form an important part of a submission

In recognition of this fact, a strict data management strategy was developed already from the outset of the Continental Shelf Project. The strategy imposes the necessary constraints to ensure the best possible data quality and minimize risks of technical errors in the submissions. Furthermore, close attention was given to consistent handling of data and GIS products across the five submission areas as well as long-term accessibility of the databases to accommodate the assumed long latency periods between the submissions and the respective examinations by the CLCS. The strategy proved its worth during the interactive dialogue with the Subcommittee considering the area north of the Faroe Islands four years after its submission, and the

Danish/Faroes Delegation successfully managed to revitalize the original database in order to provide swift updates to data and maps during the sessions.

Due to the modus operandi of the CLCS, recommendations for the latest submission north of Greenland cannot be expected before the middle of the next decade. The data management strategy will therefore hopefully contribute in keeping both data and knowledge within the project updated and state of the art.

SESSION 9

Lindsay Parson, Beth Owens and Rosemary Edwards

Deconstructing the Shelf - A Critical Analysis of the Commission's Recommendations to Date and Impacts on Timetabling Sub-commissions to 2025

Recommendations in respect of 24 coastal states have been adopted by the Commission on the Limits of the Continental Shelf since the first Article 76 submission was deposited by the Russian Federation on the 20th December 2001. Most of the recommendations are published in summary form, a few in full and a couple, not at all. They describe, in rather general terms, the Commission's evaluation of the states' analyses and confirm what outer limits they can approve. In many cases, the detail in these documents also can provide a rare insight as to what the real practice of the Commission is, as opposed to the theory which they drafted in their Scientific and Technical Guidelines, published in 1999 - a full 18 months before any submission arrived for them to examine. Explanations for the Commission's recommendations and decisions are scarce, but clearly, as a result of their intervention, foot of the slope points have been moved (both landward and oceanward) or rejected altogether, natural prolongations denied, and in some cases ridge classifications announced in a less than fully consistent manner. This paper scrutinizes the Commission's pronouncements so that states with upcoming sub-commission examinations can be as informed and prepared as possible for their work. We also examine the implications of the Commission's output to date on the likely timetabling on the remaining 55 submissions which still languish, awaiting their own recommendations.

Virginie J.M. Tassin

The Regulation of Exploration and Exploitation Activities on the Extended Continental Shelf

The implementation of the unbridled extension procedure of the continental shelf by nearly 100 States worldwide raises many questions relating to the articulation of Article 76 of the United Nations Convention on the Law of the Sea of 1982 (LOS Convention) with the rest the legal regime of the continental shelf. Some of these questions deals with the implementation of article 77 relating to the rights of Coastal states over the natural resources of the continental shelf, rationale of the continental shelf creation.

The progressive development of activities in the "ultra-deep offshore" reflects the desire of States to extend their continental shelf beyond 200 nautical miles for the control and exploitation of the resources of this ocean space. The *ipso jure* legal status of the continental shelf under the LOS Convention offers a regime « *sur mesure* », guaranteeing States an easy and flexible access to the continental shelf's natural

resources. As a consequence, exploration and exploitation activities are poorly regulated, within the LOS Convention and International Law, and the protection of natural resources has been neglected.

So far, the doctrine and practice have focused their interests on the regulation of deepsea activities in the Area. The first Advisory Opinion of the Seabed Dispute Chamber of the International Tribunal for the Law of the Sea and the impressive work of codification of exploration and exploitation activities of the International Seabed Authority testify of these trends. But the proliferation of mining projects beyond 1,500 meters, and the recent adoption by Tonga, Fiji, and the Secretariat of the Pacific Community of legal instruments dedicated to the regulation of activities on the extended continental shelf, prompt us to look at the framework regulating the sovereign rights of exploration and exploitation of the Coastal state over its continental shelf and the protection offered to its natural resources.

This study will include a comparative analysis of the legal regime of the Area and the extended continental shelf and will distinguish clearly the continental shelf below 200 and beyond 200 miles. It will equip the audience with a clear understanding of the context of the creation of continental shelf sovereign rights, and the legal gaps surrounding their implementation and regulations. It will furthermore provide a horizontal and vertical reading of the Law of the Sea, enabling the audience to better understand the modern issues of marine spatial planning.

The proposed presentation will be structured around the two following issues:

1) Protection and exploitation of the seabed: the rationale behind the creation of the continental shelf regime

- a. The context of creation of the exploration and exploitation sovereign rights (*travaux préparatoires* of the Geneva Conventions and *travaux préparatoires* of the LOS Convention)
- b. Content and scope of the sovereign rights in the context of the extended continental shelf
- c. Identification of exploration and exploitation activities (in reference with the activities conducted in the Area and the Advisory Opinion of the Seabed Dispute Chamber of the International Tribunal for the Law of the Sea)

2) Implementation of the exploration and exploitation rights on the continental shelf

- a. The regulation of activities of exploration and exploitation on the extended continental shelf
- b. The protection of natural resources of the continental shelf and extended continental shelf (this will include a comparative approach between the regime of the extended continental shelf and the regime of the Area).

Joanna Mossop

Regulating Marine Scientific Research on the Extended Continental Shelf: The Challenges posed by Article 246(6) of the Law of the Sea Convention

An increasing number of coastal states have received recommendations for the outer limits of their continental shelves from the Commission on the Limits of the Continental Shelf. This raises questions as to how states can regulate activities in the

area of the continental shelf beyond 200 nautical miles (extended continental shelf). Article 246 of the LOSC gives coastal states the power to refuse consent to marine scientific research projects on the shelf that are of direct significance to the exploitation of natural resources on the shelf. However, this right is limited in relation to resources on the extended continental shelf by paragraph 6. I will explore two questions. First, I will ask how the limitation on this right in paragraph 246(6) will work in practice. In particular, can a coastal state establish a marine protected area on its extended shelf and refuse permission for MSR that has significance for the exploitation of resources? Second, I will ask precisely what sorts of research activities in relation to the extended shelf can be regulated by the coastal state. Can the state only regulate research that has a physical contact with the seabed, or may the coastal state regulate research that takes place solely in the water column but that provides information about the resources of the shelf? The Law of the Sea Convention is ambiguous on this point.