

1. Welcome from the President of SubOptic

The SubOptic Conference comes around only once every three years. It is the longest running and most comprehensive conference series in the world for the submarine cable industry. SubOptic 2019 will once again offer an outstanding world-class program. This extraordinary event, with Ciena as Host Sponsor, will be held in New Orleans, USA from 8-11 April 2019.

With the Call for Papers launch, you now have a terrific opportunity to participate in this much-awaited event and be part of its ongoing success. It is the one event that encourages people from all walks of the subsea community to discuss in depth the issues that are more and more critical to our industry.

To assemble the most compelling content, SubOptic chose a renowned executive and scholar as Program Chair, who together with a capable Program Committee is selecting the right topics and speakers. The Program Committee works with the Papers Committee which manages the Call for Papers and time-tested peer review selection process, involving experts for each chosen topic area. All this ensures that SubOptic maintains the high quality and professional standards on which the conference has built its reputation since it was founded over 30 years ago.

Don't miss your opportunity to contribute to 'Rethinking Global Networks' and be with us at SubOptic 2019, by responding to the Call for Papers.

I look forward to your contributions and to seeing you all in New Orleans next year.



Yves Ruggeri
President of SubOptic Executive Committee
RGConsulting

2. Introduction from the Chairman of the Program Committee

I am pleased to have been appointed the Program Chairman for SubOptic 2019. We are making great strides in preparing an exciting program for the event next year.

The first task of the committee was to choose a theme – a topic of current interest to the industry, selected two years before the conference takes place. Our theme for the conference is **To the Beach and Beyond – Rethinking Global Networks**. This was carefully selected to represent the massive changes that have occurred in our industry even in the short space of time since Dubai in 2016.

We have already appointed the Vice Chairs of the Papers Committee, two well-known and respected professionals in our industry, Marc-Richard Fortin and Stephen Dawe.

In addition, we have selected six challenging topics for the Master Class sessions on Day 1 of the Conference. To enhance these further, Submarine Telecoms Forum, Inc. will be awarding accredited Continuing Education Units (CEUs) to qualifying attendees. This will address some of the key progressive issues identified by the SubOptic Executive Committee and the Program Committee. We see education as a differentiator to other conferences in our industry and along with the more technical emphasis in the oral and posters sessions we will continue along this path.

Three other challenges that we will address in 2019 are diversity, globalization and demographics. You will see from the Master Classes that we aim to tackle the diversity and globalization issues head on. There have been many changes in the interim years since the inception of SubOptic from an industry that catered for telephonic links between the economic hubs in Japan, Western Europe and North America to a data-centric business that touches nearly every countries' shores. In order to continue to prosper we must reflect this in the attendance in New Orleans as well as the 2022 event, which is already in planning for the Far East.

Finally, a word on demographics. We are essentially an ageing congregation (myself included). The industry will continue to thrive, as there is no better medium than optical fibre. We have to bring in young blood and the CE scheme will hopefully encourage employees to send some graduates to the event as well as support them to present either papers or equally important poster.



Stuart Barnes
SubOptic 2019 Program Committee Chairman
Xtera

3. Introduction from the Chairmen of the PAPERS Committee

I was happily surprised when Stuart Barnes asked me on the phone a few months back if I would accept to participate at SubOptic! Of course! This is such a great conference! For those who never attended - please do not miss it!

There is so much content to be discussed at SubOptic 2019. The telecom industry as a whole has become an essential service, the submarine networks by themselves are supporting an incredible amount of the worldwide communication.

Each and every member of the industry is going through some transformation: the vendors are changing, the operators, the OTT are expanding at an incredible rate, new technology and new roles are defined.

This is a very exciting time for the industry so please submit your abstracts, papers, and come to present what the future will look like at SubOptic 2019!



Marc-Richard Fortin
Papers Committee Co-Chairman
TE SubCom

I am delighted to be able to extend my association with SubOptic for the 2019 conference. When Stuart Barnes asked me to participate as Papers Committee Co-Chairman it was an opportunity for me to have more input to the production of this global event.

As Marc observes, the industry is going through an evolutionary period, where this leads is still unclear. This points to a topic-rich environment for SubOptic 2019 Papers.

Marc and I, working with our Vice Chairs and their teams of reviewers, who support the Papers Committee, are looking forward to receiving your abstract submissions and are pleased to accept the challenge to deliver a further ground breaking Conference for the industry.



Stephen Dawe
Papers Committee Co-Chairman
Vodafone Group Services

4. Conference Theme

Our theme for SubOptic 2019 is To the Beach and Beyond – Rethinking Global Networks.

It is only 2 years since SubOptic 2016, but in this short period of time the industry has seen massive changes as the combined factors of data driven bandwidth and the associated explosion of data centers dislocated from the traditional telco PoPs have begun to stretch the limits of the physical infrastructure.

Our theme represents the challenges to the industry as a result of these changes, the consequences of the shift from telephony to data and the rapid repositioning of PoPs in both a physical and global sense.

Together with an examination of the changes in our industry, the SubOptic 2019 agenda will also encompass and invite dialogue on traditional topics such as Marine Services and Operations, Legal and Regulatory issues, Network Operations and the Oil and Gas market.

We expect SubOptic 2019 to update on the new topics debated at SubOptic 2016 and now an established part of the industry, for instance data center networking, Open Systems, Disaggregation and Software Defined Networking (SDN).

More detail about the areas in which we welcome and encourage papers to be submitted is given in the section ‘Program Topics for SubOptic 2019’.

5. Preview of the Conference Program

The program structure for SubOptic 2019 will be slightly amended from the last few conferences.

The Program Committee has listened to comments and feedback from SubOptic 2016 and have restructured the Oral Papers sessions to a slightly shorter session length – each Oral Paper session will last 75 minutes. Oral Paper presenters will have the same time allocated to their presentation (15 minutes with 3 minutes for questions), but only four speakers will present in each session.

The Poster Session will also be modified so that there is more time available to review the poster presentations.

The number of topic areas in the Call for Papers has been increased to eight:

- Networks of the Future
- Wet Technology
- Dry Technology
- Marine Advancements
- Regulatory, Legal and Security
- Commercial and Funding
- Global Citizen
- Oil & Gas and Special Markets

In other sessions we keep the format built on successive successful prior conferences:

- 6 Master Class sessions
- 2 – 3 Special Sessions, either Round Table or Workshops
- 3 Keynote Speakers

The morning and afternoon of Monday 8 April 2019 will include Master Class sessions, where we expect to educate on topics that are new to the industry, update on new technologies and legal and regulatory issues, and revisit older topics of special interest.

As usual the Welcome reception will be held on Monday evening at which time the Exhibition Hall will be opened. This is always an enjoyable networking occasion.

The Opening ceremony on Tuesday morning will launch the formal proceedings of the conference, followed by a keynote speaker and the first session of oral paper presentations.

The Poster Session will be held on Tuesday afternoon and will incorporate drinks and light refreshments to encourage further networking.

Wednesday will start with our second keynote speaker, followed by a workshop session before moving to further oral paper presentations. New for SubOptic 2019, the gala dinner will be held on Wednesday evening.

Thursday will include further oral paper presentations, several special workshop sessions, a final Keynote speaker and the Closing ceremony.

6. Social & Networking Program

In addition to the Welcome reception held early on Monday evening, the traditional Gala Dinner will be held on Wednesday evening, 10 April. Monday and Tuesday evenings will be free for functions organized by conference participants or for personal free time.

The content covered by each of these topics and the Vice Chairman managing each topic area is detailed in the section ‘**Program Topics for SubOptic 2019**’ below.

The Vice Chairmen and Papers Co-Chairs are supported by 50-70 reviewers who have the task of reviewing the Abstracts submitted by authors and then to make recommendations on which of these should be presented as Oral and Poster Presentations during SubOptic 2019.

These reviewers are chosen from the broadest possible spread of organizations with expertise in the particular topic area. Only one reviewer from a company is allowed per topic area. The chosen reviewers will be recorded in the final SubOptic 2019 Proceedings.

8. Request for Abstracts & Guidelines for Submission

The SubOptic Papers Committee is pleased to request industry experts to submit Abstracts for papers to be presented as either oral or poster presentations at SubOptic 2019.

Deadline for Abstract Submission

The NEW deadline for submission of Abstracts is now 14 September 2018.

Format of Abstracts

Abstracts must be written in English, and consist of plain text only, of 100 - 300 words. Essentially the abstract should be a brief summary (or an 'abstract') of the proposed paper or poster.

Each Abstract should be original in nature and cover some aspect of the program topics detailed in this Call for Papers. Abstracts will be evaluated and scored for quality, credibility, originality and general interest.

Overt product advertising or company publicity within an Abstract (or the subsequent paper) is not permissible and will be cause for rejection of the submission.

Any type of company of the submarine industry (operators, vendors, manufacturers, service providers, etc.) is invited to submit.

Abstract Submission Method

To submit an Abstract for consideration, the lead author of the paper should go to the SubOptic 2019 website <http://suboptic2019.com/> any time from **16 April 2018** up to **14 September 2018** and click on ‘Authors’ menu and then:

- (a) Select ‘Author Registration’,
- (b) Fill in the registration form then click on ‘Submit’(note all fields with an asterisk are required),
- (c) You will receive an email with an activation URL link. Copy and paste this link to your browser to activate your account (all browsers are supported),
- (d) Your browser will then upload a page with your account activation confirmation, username and password,
- (e) Click on ‘log in’ then enter your user name and password,
- (f) Once logged in, select ‘Abstract Submission’ under ‘Authors’ and begin the abstract submission process (note only the lead author can submit an abstract). Select the topic area, the type of presentation then enter the paper title and the abstract (in English, 100 to 300 words),

- (g) After you have submitted your abstract, you will receive a confirmation email. You have the chance to review and edit your submissions by clicking ‘Your Submissions’ under the ‘Authors’ menu on the SubOptic 2019 website until 14 September.

The SubOptic 2019 Papers Committee reserves the right to change the designated topic area for any Abstract, as may be appropriate.

Notification of Acceptance

Under the guidance of the SubOptic 2019 Papers Committee, multi-company panels of industry experts will review all abstracts in an objective and professional manner, and select the papers desired for presentation at the conference. The Lead Author will be notified by email in early November 2018 of the committee's decision.

Publication in the Proceedings of SubOptic 2019

If an Abstract is accepted for oral or poster presentation, the author will be required to submit a paper (nominally three to five pages, but any length within reason will be accepted), written in English, to the SubOptic 2019 Papers Committee (via the website) by **31 January 2019**.

Accepted papers will be published in the SubOptic 2019 Conference proceedings, contingent upon the transfer of copyright to the SubOptic 2019 Executive Committee.

Program Topics for SubOptic 2019

The detailed contents of each of the eight topic areas for SubOptic 2019 are as follows:

1. Networks of the Future

Global Optical Architect for Facebook Subsea team, Tim Stuch will be the lead for this great topic.

These papers should cover current and future submarine cables market analysis, trends that have evolved recently or were not there before, building a successful business case, the drivers for new projects and the challenges that are faced when building a new Submarine Cable.

These sessions will cover everything from integrating networks and data centers beyond the beach, the impact of OTT infrastructure and the future of manufacturing. Additional discussion points include:

- Next steps for capacity and network technology
- System lifetime
- Avoiding bottlenecks in capacity or routes
- Future role of traditional operators
- Software API

“I’m looking forward to coordinating review of submissions for the Networks of the Future section of SubOptic 2019. Technology advances and a changing purchaser base have transformed the submarine cable market place. New innovations will continue to reshape what networks look like, how and where they are built, and who operates them. This section explores many avenues to help picture the Networks of the Future. What new tools for supervision, data gathering, and analysis will emerge and how will they change the operational environment? How will advances in manufacturing, materials, and reliability change system designs, useful lifetimes, and operational models? Will the role of the PTT and OTT evolve or change? These topics and others will help define the Networks of the Future.”



Tim Stuch
Facebook

2. **Wet Technology**

The SubOptic 2019 ‘Wet Technology’ topic will be led by Olivier Gautheron, Chief Technology Officer, ASN. These sessions will delve into the current specifications of fibers, cables, repeaters and branching units, and what future designs must improve upon to meet system needs. Additional areas to be covered include:

- Open submarine Networks
- Unrepeated systems
- System Powering
- Power budgets

“It is my pleasure to coordinate the review of submissions dealing with the “Wet Technology” topic of SubOptic 2019. This topic targets all technologies at stake in submarine optical telecommunications networks: cable, repeaters, branching units, fiber, gain equalizers, power feeding as well as specific technologies involved in unrepeated systems; last but not least, this topic will also address the challenges raised by the recent concept of open networks, such as open line design. Since SubOptic 2010, coherent detection has been the main technical revolution in our submarine networks, providing a ten-fold increase of cable capacity. In the scope of optimizing the cost/bit or increasing further the networks capacity as well as flexibility through R-OADM, significant innovations of wet technologies (WSS, SDM...) are now back in the limelight. A fascinating program indeed! “



Olivier Gautheron
ASN

3. **Dry Technology**

The ‘Dry Technology’ topic will be reviewed and overseen by Yoshihisa Inada, NEC. Sessions will provide a comprehensive look at cutting edge software techniques/practices used in more

efficiently managing networks such as SDN, increased efficiency of transmission equipment and terrestrial security at the landing site. Additional areas to be covered include:

- Disaggregation to maximize the efficiency of cable capacity
- Equipment compatibility
- Spectrum sharing
- PFEs of the future
- Network management

“This topic covers all the major aspects of the dry plant technologies in submarine networks: from transponders to Power feeding equipment or submarine line monitoring. In recent times, new modulation formats have been proposed to achieve transmission performance that closes the gap to the Shannon limit, which can change the way we look at system upgradability in the future. Also, the advent of open cables has brought innovation to the way that submarine lines interface with transponders. Finally, aspects like line monitoring or Power feeding equipment must be updated as the systems become more intelligent and adaptive. SubOptic 2019 will be certainly an exciting opportunity to explore the innovations that R&D has brought the terminal equipment of submarine networks.”



Yoshihisa Inada
NEC

4. Marine Advancements

The topic of ‘Marine Advancements’ will be organized by Ana Chamon, Marine Maintenance Manager, TE SubCom. These sessions will explore installation techniques and best practices, cable damage prevention, global pinch points, and cable ship fleets. Additional areas to be covered include:

- Route survey
- Desktop study
- Operating permits
- Cables A to Z (protection, database improvements, charting, tracking traffic)
- Marine maintenance

“This is an exciting time as the OTT content providers drive innovation at all levels in the Industry, including Marine, wherein 3 new cable ships have been or are being built for the first time in years. The program topic in ‘Marine Advancements’ gives the industry the opportunity to hear from prominent groups within the Marine Sector who will talk about recent advances ranging from ship design all the way down years to deployment software.”



Ana Chamon
TE SubCom

5. *Regulatory, Legal and Security*

Kent Bressie, Harris, Wilshire & Grannis will be in charge of arranging sessions on the topic ‘Regulatory, Legal & Security’. In addition to regulatory and legal issues updates, sessions will examine global permitting processes, security for networks and the landing stations. Other areas include:

- Terrestrial routes and how they differ from subsea needs
- Permits in principle
- Cabotage

“Customer Privacy and data security” I’m pleased to work with the papers committee to focus on emerging legal, regulatory, and security issues and bring fresh thinking to more longstanding issues. I am particularly keen to encourage papers and participation by new and young voices in the industry.”



Kent Bressie
Harris, Wiltshire & Grannis

6. *Commercial and Funding*

The topic of ‘Commercial and Funding’ at SubOptic 2019 will be organized by Bernard Logan, Chief Commercial Officer, Main One Cable. The sessions will examine best practices in system project development and impact of geopolitics on the cable industry. Other areas to be discussed include:

- Funding types
- Role of consultants in the development/installation process
- Business case development

“I am excited to address the topic of ‘Commercial and Funding’ at SubOptic 2019. With the trend of current consortium systems involving more and more dark fibre sales to OTT’s and cables being supplied independently of SLTE it will be interesting to understand how this affects the commercial arrangements of both buying and maintaining such systems and if funding has been made more complex or easier.”



Bernard Logan
Main One

7. *Global Citizen*

The topic of ‘Global Citizen’ will be overseen by Nicole Starosielski, Associate Professor, New York University. Sessions under this topic will address environmental concerns and considerations to be aware of and integrate into processes, conservation efforts that impact installation and maintenance. Additionally, the topic will explore:

- How to fill the skilled labor gap?
- How to attract more female employees?
- How to harness the power of renewable energy sources?
- Environmental planning

“The topics of the Global Citizen area—environment, energy, education, awareness, and the people of the cable industry—are critical to the industry’s future. I am excited and looking forward to supporting the people working on these important developments as well as the SubOptic Papers Committee.”



Nicole Starosielski
New York University

8. *Oil & Gas and Special Markets*

Denise Toombs, ERM will oversee the topic of ‘Oil & Gas, Special Markets’ which covers recovering and scrapping, shore end reuse, and low latency network needs. Additional areas include:

- How system developments work in the oil & gas industry
- Challenges of network topology, capacity, operations and maintenance in Oil and Gas markets
- Technologies for Oil and Gas markets
- Emerging Special Markets, PRM, seismic and other monitoring
- Smart repeaters

“This Topic Area opens the technical and regulatory conversations to more marine users – oil & gas, energy sector, and special markets – to explore areas ripe for cross-pollination of opportunities, ideas and solutions. The world’s oceans are increasingly needed for multiple commercial and non-commercial uses, each with unique drivers and constraints. We are looking for papers that will inform attendees and stimulate discussion about special markets, areas of common interest and issues, and innovations with cross-industry benefits for all stages of the capital life cycle. Share your perspective and ideas!”



Denise Toombs
ERM

9. About the Program Committee

The Program Committee is responsible for formulating the overall conference program structure and timetable, determining the overall theme and key topics for the conference and for choosing and organizing Master Class sessions, Keynote Speakers, Round Table and Workshop sessions. The Program Committee provides guidance to the Papers Committee where required in the Call for Papers process and selection of conference presentation material.

For SubOptic 2019 the Program Committee consists of:

- Dr Stuart Barnes - Program Committee Chair
- Marc-Richard Fortin - Papers Committee Co-Chair
- Stephen Dawe - Papers Committee Co-Chair
- Ian Clarke and Brian Lavallée – Representing SubOptic 2019 Host
- Lynsey Thomas - Independent Subsea Telecoms Consultant
- Alice Shelton – SubOptic 2016 Program Chair
- Keith Shaw – Representing the Regional Champions
- Shota Masuda NEC

The members of the Program Committee together with the Papers Committee have many years of experience in the submarine networks industry. Every one of the team is dedicated to making SubOptic 2019 as successful as we possibly can.

10. The Host Organisation

SubOptic 2019 is being hosted by Ciena

“Ciena is honored to serve as host of SubOptic 2019, the leading global industry forum for the undersea communications sector. In joining forces with SubOptic, we are committed to delivering an event that brings together experts and professionals across the submarine networking community toward making greater advancements in this critical technology arena.”

said Anthony McLachlan Vice President and General Manager, Submarine, Ciena.

11. About New Orleans and the Venue for 2019

SubOptic 2019 will be held at the New Orleans Marriott in New Orleans, Louisiana USA on 8-11 April 2019. The hotel is located near Jackson Square and Bourbon street and a short walk from other historic landmarks. New Orleans is considered the birthplace of jazz and known for its Cajun cuisine, Mardi Gras celebrations and the bayou. Tours of this remarkable city in Louisiana will be available during SubOptic 2019 as well as prior and post event dates for families accompanying attendees. Tour information can be viewed at <http://suboptic2019.com/1-information/>.

12. About SubOptic Association

Established in 1986, SubOptic (www.suboptic.org) is a non-profit association active in the international undersea communications industry and best known for the triennial conference it organizes, widely considered to be the global summit of the submarine cable community.

SubOptic 2019 in New Orleans will be the tenth in the series, making it the longest running and most comprehensive conference in the world for this industry, and the only one organized by the

industry itself. SubOptic 2016 in Dubai attracted nearly 700 attendees from 200 organizations representing over 75 nationalities.

After thirty years of successful events, SubOptic Association set out in 2017 to improve and expand the services it provides and the value it brings to the subsea cable industry. In addition to staging the renowned SubOptic conferences, under its new constitution the association is widening its scope and extending membership to all participants in the sector, with the aim of becoming the industry’s global trade association.

As part of this renewal, we have teamed with a professional event management organization, STF Events, to manage all the logistics of SubOptic 2019. Nevertheless, SubOptic still maintains complete editorial and program development responsibility, to ensure the conference truly remains, “For the industry – by the industry”.

Under the newly-adopted constitution, the Association’s purpose is to promote the interests of organizations and individuals involved in the planning, deployment and operation of submarine cable systems, the technology used in such systems and the regulation of all related activities. The Association provides a forum for the discussion of ideas, the exchange of non-competitive information, the advancement of knowledge through research and training, and raising of awareness of issues relevant to the submarine telecommunications cable industry.

This mandate builds on past accomplishments such as the guidelines for standard contracts to supply and construct cable systems, and the “Guide” series of tutorials on implementing cable systems, both freely available on [our website](#). Another study is underway on the lifespan of optical amplifier repeated systems, with further output to be presented at SubOptic 2019.

Until a new Executive Committee is elected at SubOptic 2019, a transitional EC under the current President, Yves Ruggeri, is hard at work to oversee the conference preparations and to roll out new services and activities for our Members. The EC is also watchful that the conference program reflects a high standard of professional and academic integrity, without favoring any organization or segment of the subsea community.

We warmly invite all those active in the subsea cable community to become part of the revamped SubOptic, joining over 50 companies that have signed up since the launch of open membership in 2017.

All members will be eligible to stand for the 10-person Executive Committee next April, the aim being to attract a variety of candidates representing each of the main subsea industry segments as well as the diversity of its people.

With papers, poster sessions and discussions from the global industry’s leading experts, and with New Orleans as the venue, the SubOptic 2019 submarine telecoms conference promises to deliver the best and liveliest event in its history.

13. The Current SubOptic Executive Committee

Name	Company	Position on Executive Committee
Yves Ruggeri	RGConsulting	Executive Committee President
Erick Contag	GlobeNet	Member

Stephen Dawe	Vodafone	Member
Graham Evans	EGS	Member
Paul Gabla	Alcatel Submarine Networks	Member
Shota Masuda	NEC	Member
Dave Robles	TE SubCom	Member
Jayne Stowell	Google	Member
Dean Veverka	Southern Cross Cables Ltd.	Member
Stuart Barnes	Xtera	Ex officio - Program Chair
Ian Clarke	Ciena	Ex officio - 2019 Host
Mike Constable	Huawei Marine Networks	Ex Officio - 2022 Host

For more information about SubOptic Association please contact Joel Saltsman, Secretary to the Executive Committee, at jsaltsman@suboptic.org