

# Future of the Information Theory Society (FITS)

**Executive summary.** The events of 2020 have highlighted the critical need for a unified and long-term online presence of the IEEE Information Theory Society (ITSoc), with the key objective of providing added value to our members. This report puts forward a vision for the *Future of the Information Theory Society* (FITS) and calls for renewed investments in web technologies to prepare ITSoc for the changes in operation that are likely to become the new norm.

**Committee.** The committee was formed upon the request of President Aylin Yener and was composed of (in alphabetical order): Erik Agrell, Matthieu Bloch, Salim El Rouhayeb, Brian Kurkowski, Henry Pfister, Anand Sarwate, Aylin Yener, and Wei Yu. The committee met online on Monday June 01, 2020 and Tuesday, June 16, 2020 to prepare the report.

**Assessment of current situation.** The confinement measures established world-wide have forced everyone to reassess traditional means of interactions. In the specific case of ITSoc, these changes have concretely led to transitioning to an online ISIT and the postponement of other events such as ITW 2020 and Schools of Information Theory worldwide. While one can hope that face-to-face interactions will restart in a near future, some of the transitions to virtual meetings are likely to become the new normal. The organization of online events and associated challenges has unveiled numerous technological and practical challenges but also offers an opportunity for re-thinking 1) ITSoc's web presence and 2) how ITSoc can better serve its distributed membership online. Concurrently, the finances of ITSoc for 2020 are strong, which offers a unique opportunity to launch a new bold initiative .

**FITS vision: One ITSoc.** Over the last decade, ITSoc has significantly developed its web presence and embraced technologies much beyond the static website that existed pre-2007. Some of these efforts include the transition to a Content Management System for itsoc.org, but also include successful grass-roots effort, such as the online Shannon Seminar launched and organized by Salim El Rouhayeb. Talks at schools and ISITs are now systematically recorded and made available on YouTube, and ITSoc has already produced several educational videos geared towards a broader audience. While these efforts have had an undeniable degree of success, the committee has identified four areas of improvements.

- **No unified portal for ITSoc resources.** Presently, resources are scattered between itsoc.org, youtube, individual event websites, emails, etc. This contributes to a reduced visibility of our otherwise very active community.
- **Lack of consistent social media presence.** Although ITSoc possesses a twitter account and a Facebook page, these social media outlets are not consistently used. This is partly explained by the lack of full-time dedicated person to this endeavor, but other societies are definitely much more engaged than we are. Some of our members are also very active and ITSoc would certainly benefit from their visibility.
- **No clear member benefits.** Related in part to the absence of unified portal, ITSoc does not offer clear member benefits. Most of our products (videos of lectures, talks, newsletters, etc.) are openly available for the general public. While putting everything behind a paywall is probably not the way forward, one could envision a compromise by which archived resources would only be available to members.
- **No support for live remote events.** There is presently no infrastructure allowing ITSoc to support online events (BoG meetings, small workshops, schools, even conferences). While many conferences have gone online, live events and interactions are still rather limited, perhaps reducing one of the main benefits of conferences. Furthermore, many events, such as DL lectures, are not necessarily recorded and broadcasted.

The FITS committee's vision is therefore one in which itsoc.org becomes a **unified portal for accessing all our resources** and supporting our volunteers with the infrastructure to hold interactive and engaging online events. FITS vision is to embrace a changed world in which on-site meetings are no longer the norm and in which much of our interactions are online.

**Short term goals.** To realize this vision, the committee has identified several concrete short term goals:

- *Authentication with IEEE Single-Sign On.* The first step toward developing of unified portal for member services is a tighter integration with IEEE single-sign on (SSO) system. This would not only remove the need for our members to have yet another login/password, but this will also allow us to defer to IEEE the task of tracking membership status. IEEE also has some initiatives already in place, such as [IEEE Dataport](#) to share open source data or [IEEE Collabratec](#), which among many things offers an intergration with Overleaf, that we could try to connect to. SSO integration is now a common feature that is offered as a module by many content management system.
- *Hosting of multimedia resources* Our current operation relies quite heavily on YouTube, which has many benefits, including ease of use, availability, no need to support ingrastructure, etc. One of the drawbacks is that we also give away control and these cannot be offered as member benefits anymore. In addition, YouTube is not universally available and does not reach some of our constituency. The cost of archiving multimedia resources is actually not that high, the main cost is in delivery. Several solutions exist, from simple in-website hosting to full fledge content delivery networks (e.g., Amazon Cloudfront). These solutions are scalable and can be modified adapted to our needs.
- *Video conferencing integration.* The recent move towards online meetings shows that investments must be made to better support hybrid meeting formats in which some participants may not be physically present. One prominent example are BoG meetings, which are mostly open to the public, but this also includes more generally seminars, workshops, etc. The top video conferencing providers (Zoom, BlueJeans, Webex) now offer APIs to integrate their services into client websites, both for live meetings and for archiving. Integration would also allow us to link talks to resources, such as papers, slides, etc.
- *Support for events.* ITSoc traditionally lets event organizers (seminars, workshops, ISIT) run their own web infrastructures. While they are undeniable advantages to this approach, this makes archiving difficult in the long run and sometimes forces organizers to reproduce and duplicate efforts. As part of the unified portal, the goal would be to offer easy to use, easy to archive web infrastructure.

**Beyond the first steps.** The One ITSoc vision outlined above could also support additional initiatives from other committees. Among the many possibilities, the committee identified the need for job advertisement. itsoc.org is presently a good resource for postdoc offers, but a large fraction of our constituency is in industry, and we may want to advertise industry jobs in addition to academic ones. Having perhaps industry members figuring out what sort of career development we could offer to student members (or postdocs, etc.) would be great, .e.g, "Turning Your Info Theory Skills into Job Skills." We would also need to understand where our student members are ending up, like alumni associations do.