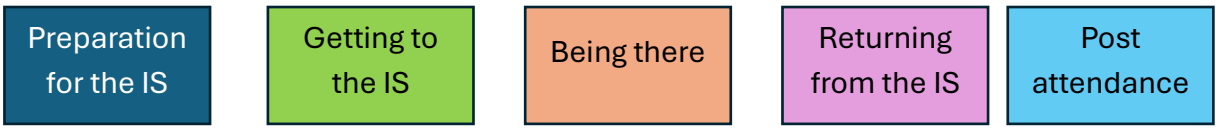
My INCOSE International Symposium systems

I see the world and the things in it as systems, so it is interesting (for me at least) to consider the multitude of systems involved in my attendance at the annual INCOSE International Symposium. So this post represents my viewpoint of what is involved in my personal attendance and involvement (declaring my bias / viewpoint!).

The first consideration, to get myself set up, is the lifecycle of the annual symposium, so I can structure the analysis – see figure below



A. Preparation for the IS

The preparation for an IS starts many months (even years) before the actual data of the IS. The systems involved in this stage are

1) INCOSE (Professional society) – organizing, planning, publicising and taking bookings for the event
2) Internet (specifically INCOSE webpage) – to publicise the event, act as portal to submitted papers, and to allow bookings
3) Paper review / management system – a place for authors to submit papers , coordinate reviews and determine selected papers (INCOSE use Easychair)
4) Conference venue (infrastructure) – needs to be selected by INCOSE, and have suit
5) Hotels (in vicinity of the conference venue) – specifically hotels which provide a negotiated conference rate for attendees – but generally attendees do their hotel booking and will find their own accommodation – (see section B) below)
6) SE enterprises who act as sponsors and exhibitors at the event
7) Authors (who will also be attendees) – prepare and submit papers / presentation / panel proposals, then (if accepted) respond to reviewer comments, accept (and notify INCOSE) invitation to present
8) PC (laptop) – as an author I needed a PC to write the paper (and then the presentation)
9) Microsoft office software – as well as the physical system used to write the papers on, I needed Microsoft Office software (Word and PowerPoint) and the Teams to collaborate (over the internet – see 2) with co-authors. Some might argue that the software is an intrinsic part of the PC system – but they are designed and produced by different companies and are independent

B) Getting to the IS

10) Attendees (7 Authors / presenters are a subset of this group) – who need to book their attendance (this uses 2 Internet, and the banking system below)
11) Banking systems – to facilitate payments (registration fees, and travel costs
12) Alarm clock – this may appear trivial but making sure I woke up in plenty of time to catch the coach is a critical part of the overall journey. Whilst my radio alarm is a relatively standard piece of electronic equipment, it does contain a link to broadcast time signals to ensure it is set to the correct time

13) UK government passport – my passport is an important means of identification both leaving country and proving who I am on entry to Canada
14) Canada government immigration service – to get into Canada you need an e-visa in advance (travelling from UK as British Citizen). Found details of how to apply and applied using 2) the internet (again) – needing 11) and 13).

Transport systems – there are a number of these, and these are specific to my journey – and I have separated the transport company and the equipment involved in the journey

15) Car – used to get to the coach station
16) Coach company – I used National Express – booking this transport requires 2 Internet and 12 Banking system to book and pay for this) – who organize a timetable, booking and operate the service
17) Coach - the physical vehicle (which I used from Bristol to Heathrow).
18) Roads – the physical infrastructure 13 car and 15 coach travel along
19) Coach station – at Bristol – a piece of infrastructure in Bristol from which the coach leaves. Note the integration between the road system and the coach was tricky – no convenient drop off point for the car to stop and me to unload the luggage
20) Map / Navigation system – whilst my wife (who drove me to the coach station in the car) knows the way to the coach station and we didn't use the car navigations system, I am sure the National Express coach driver did – not because they don't know the way down the M4 from Bristol to Heathrow – but because they need to be aware of traffic conditions / roadblock and be able to navigate an alternative route if needed
21) Airlines – like the coach providing a travel service including timetable, booking operation of flights, including catering and luggage, and the check in / boarding control of the passengers. This did include "on-line checkin" – which proved totally unnecessary with Air Canada as they didn't give a boarding pass (in fact they produced a confirmation of checkin that explicitly said it was NOT a boarding pass, and at airport all the same information was requested at the machine that printed my luggage tag and boarding pass.
22) Long haul Aircraft – the physical system used to transport me from Heathrow to Ottawa. This instance of aircraft type was a Boeing 787. This includes a number of important sub-systems (always interested in the engines!). There are also a number of important sub-systems that specifically address passenger comfort – the seat, catering, environmental control and entertainment. An innovation I saw was an indication on the film display of how long left in the flight – so you can avoid being stranded with 15 minutes of a film left! I have assumed the aircraft / engine maintenance systems (its realisation systems) are part of this – but
23) Airport (Heathrow) – the infrastructure for the transition between land and air transport. Didn't use Terminal 5 (which I enjoy, particularly as the building of it is a case study in good Systems Engineering practice, as explained by Professor Patrick Godfrey). Includes the check-in / bag drop systems, security, and catering (I used) and shops (I didn't). This also includes (at Heathrow) the coach

station. In this consideration I have considered the runways, taxi-ways and terminal as part of the same system.

24) Airport terminal (Ottawa) – similar to Heathrow, but it is a different instance of the class of systems that are terminal
25) Air Traffic Control – vital for safe execution of the flight. This was presumably a number of different national ATC, but I think they can be treated as one system.
26) Canadian Government – in particular their immigration system – which includes information about visa requirements, managing and assessing my eTA visa application, and the border / customs control.
27) Taxi system – another part of the transport system to get me from airport to hotel – includes (yet another) link to the internet to handle the credit card payment and provision of a receipt.
28) Hotel (building) – very much linked to the hotel system (see 5 above) but I see this a piece of infrastructure (that could be utilised by a different hotel chain.

C) Being there

Already discussed the physical conference centre (4) as this had to be considered by INCOSE setting up the IS conference – but it is clearly the centre of being there. The INCOSE organization and their sub-contractors (1) operate the conference (in the conference centre)

29) The City of Ottawa – cities certainly systems, and I include in this all the bars and restaurants and other leisure facilities (including, but I wont separate them, a very good art gallery, a magnificent aviation museum and several good restaurants).
5) Hotel (again) – providing accommodation previously booked
4) Conference venue again – Physical space for all conference activities – registration / coffee / meetings / presentations etc.
30) Conference IT – the system INCOSE events brought to the venue for uploading of material, presentations and recording of material
31) INCOSE conference app – for attendees to interact with- plan attendance, ask questions, view (some) material)
32) Mobile phone – in conference to see app, in city to find way around, and to link to LinkedIn
33) LinkedIn – professional social media app to share and view impressions of the IS proceedings
34) Camera (separate to phone) – given I stayed to do some sightseeing I took my good (SLR) camera for recording my impressions

D) Returning from the IS

Essentially this is the same list of systems described in Section b, in reverse order. There were however three additional systems used

35) Airport traffic app – the taxi (not distinguishing this from 25) used an app to check if any delays either en-route to Ottawa airport, or in flights from Ottawa. This used the driver's mobile phone, and the internet (again)

23) Airport terminal (Ottawa) again – made more use of its facilities (wine bar!) as I always allow too much time to check in, get through security and to not miss flight
36) Short hop aircraft – my route back (due to day of flight) meant travelling to London via Montreal. The aircraft was a De Havilland Q400 – a different (much smaller) a/c to the Boeing 787. Took longer taxing between runways and gates either end than it did to fly!
37) Airport terminal (Montreal) – need to separate this one form the other two – as it was awful. Basics of transfer, getting on plane and bag transfer worked (and fortunately didn't have to redo security), but it was crowded, poor signage, and basically a very unpleasant experience. (Heathrow Terminal 5 designed with "Operational Requirement / Purpose" to be "the World's most refreshing interchange" – a performance requirement absolutely not met by this sad excuse for a terminal (ranting over!)

22) Long-haul aircraft - again – it was a Boeing 787 again. I am afraid I am not nerdy enough to know if was the same actual aircraft that flow me out!
23) Airport terminal (Heathrow) again – immigration / arrival side of the airport. Spectacular lack of queues. Longish walk from gate to immigration, but no delay (e-gate using system 13 Passport again, and saw my bag appear onto carousel just as I arrived airport infrastructure includes a central bus station .
16&17) Coach company and coach – (Again) – including making use of flexible ticket to catch an early coach (as flight was early and no delay at immigration or luggage)
15) Car again – to get me home

E) Post attendance

No additional systems used – my laptop, internet (including INCOSE web page), the INCOSE conference app etc, used to write and share material

This has probably missed out some systems, or you may think I have been pedantic separating out 3 different terminal and 2 different a/c types. But at a conservative count there are at least 37 different, "engineered" systems to provide one International Symposium conference. Reinforces my contention that most things can be looked at as if they are systems. I intend to re-write this (slightly expanded) as part of the introduction to my proposed book "Everything is a System" with the subtitle "Or everything can be usefully seen as if it were a system!"