COST Action ES1305 (ENRAM) – Minutes for the June 2015 WG3 workshop

- Date: 9-12 June 2015
- Title: 'Visualisations: from show cases to production'
- Location: University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands
- Participants: Judy Shamoun-Baranes (JSB, NL), Hidde Leijnse (HL, NL), Adriaan Dokter (AD, NL), Hans van Gasteren (HvG, NL), Wouter van den Broeck (WvdB, BE), Jan Klaas van den Meersche (JKvdM, BE), Andrew Farnsworth (AF, US), Garrett Bernstein (GB, US), Michal Skakuy (MS, PL), Peter Desmet (PD, BE) and Bart Aelterman (BA, BE).

The aims of the workshop are:
- Use the input from the visualizations (flow visualization, TIMAMP) to write an extended outline of a paper on nocturnal migration visualization;
- Use the current flow visualization framework to visualize a test case from the US;
- Suggest and implement improvements for the TIMAMP visualization (http://timamp.github.io/) and potentially use it to visualize a test case from the US;
- Develop requirements for an animated migration visualization prototype for end users / general public based on general density, speed and direction, but without altitude, displayed on a scalable map, potentially with wind and sunrise/set information;
- Develop guidelines for moving visualization prototypes to production: hosting, near-real time information, extend to other countries, etc;
- Outline of WG3 aims for the next two years?

The meeting is overlapping with an STSM of PD and BA (INBO, Belgium), titled '*Next generation Bird migration flow visualization*', aiming at:
1. To develop new features for the bird migration flow visualization developed last year (http://enram.github.io/bird-migration-flow-visualization/viz/) and move the visualization from prototype to production.
2. To develop a prototype of a bird migration destination visualization (similar to https://siggyf.cartodb.com/viz/31789ef6-7df8-11e4-9574-0e018d66dc29/public_map), using forward trajectory model data.
3. To conceptualize a unified visualization for animal migration using weather radars.

The minutes of the workshop are given as *bullets* in the program.

Monday 8 June 2015	Room	
10:00	C4.213	STSM Peter & Bart kick-off, discuss goals Attending: JSB, PD, BA, HvG, HL • *Prioritising the ambitious goals for the STSM* • *AF, GB will bring a dataset from the US; Extending the FlowViz to this dataset will be added to the goals for this week*

12:00		Lunch
15:00		Conceptualize a unified visualization for animal migration using weather radars (STSM) *Attending: JSB, PD, HvG* • *STSM outcome should be scalable for showcase of autumn 2015 (as many weather radars along west European Flyway)* • *Drafting a visionary document for an ENRAM virtual lab. Document should include easy small steps, which makes it possible to be used for funding (e.g. LifeWatch). First draft by JSB, PD & HvG in 2015. More details in STSM report*
	C 4.213	Available from 13:00 – 17:00 for anyone that would like to use it
Tuesday 9 June 2015		

10:00 – 12:00	A 1.08	Meeting WG3 kick-off
		- Brief round of introductions
		- 15 min presentations
		    o BirdCast by Andrew
		    o TIMAMP by Wouter
		    o FlowViz by Peter
		- Brief overview of aims for coming days and division of tasks
		Attending: JSB, HL, GB, WvdB, MS, AD, PD, BA, AB, HvG
		• *All participants introduced themselves, explained their own interests and were they would like to contribute to during the workshop*
		• *JSB clarified the logistics for the week, explained the COST regulations regarding attendance, signing and reimbursements. Lunch will be the daily wrap-up moments, since everybody will work in different subgroups. Since everybody is working behind his/her computer, email is used for communication*
		• *AF presented the BirdCast system in the US, which is aiming at combining <u>weather radar</u>, <u>flight call monitoring</u> & <u>visual observations</u> (eBird) in one model system on a US as well as continent wide area. Examples of all three systems were presented. The US team (AF & GB) brought a dataset to the meeting of two weeks of bird movements from 13 radars in the north-eastern US to work on.*
		• *WvdB presented the TIMAMP visualization, as winners from the WG3 Hackathon earlier this year to the group. Different improvements and moving the visualisation to the US dataset were discussed.*
		• *PD presented the FlowViz visualization from last year's STSM to the group and discussed the improvements for this year's STSM as well as moving the visualisation to the US example (see STSM meeting from Monday morning).*
		• *Subgroups were created to work on the aims for the*

		week: *(1) FlowViz and TIMAMP to US dataset (GB, PD, BA, respectively WvdB, JKvdM & GB)* *(2) Paper outline using flow visualisations for nocturnal bird migration measured by radar (JSB, AF)* *(3) Develop guidelines for moving FlowViz visualization to real-time data @ www.flysafe-birdtam.eu (PD, BA, MS, HL, HvG)* *(4) Apply bird algorithm developed by AD to US data and compare with US algorithm (HL, AF).*
12:00		Lunch
13:00		Subgroup session
15:00	A 1.14	Meeting @ UvA on moving visualisations to production on real time data Attending: *PD, BA, HL, HvG and Robert van Versendaal (RvV, KNMI, NL)* • *HvG explained main objective for flight safety and general public (bird observers, migration) that bird density is absolutely necessary as an extra layer in the FlowViz.* • *PD explained the working of visualisation to RvV. No major issues are foreseen to implement the viz. Data input will be generated by database dump of query to csv-file.* • *Requirements document will be drafted by PD and discussed with HL, RvV and HvG*
	C 4.220	Available throughout the day for 2-3 people to sit and work *Discussions and work on US datasets and visualisations continues until late at night*
Wednesday 10 June 2015		Working at UvA: Jan Klaas, Wouter, Peter, Bart, Judy, Andrew, Garrett, Hans, Michal
09:00 – 11:00	A 1.08	Future perspective WG3 - Summary of first 18 months - Focus on early career investigators & inclusiveness countries, mainly east-European countries, Turkey & Portugal - Evaluation of infrastructure start - Other objectives of WG3 (see note below) - New STSM *Attending: JSB, PD, HvG* • *In first 18 months we had great progress, good meetings, hackathon and STSM's. Short evaluation written in hackathon minutes. JSB mentioned too much hackathons overwhelming students and ours was not enough defined for students.* • *Our WG is male dominated and has lots of senior researchers. COST is encouraging gender balance, early career investigators and especially members from international development countries (mostly*

		Eastern European countries) to take part in all our activities. Good discussion how to tackle this in at least our WG. More women, means including arenas with more women (e.g. tracking, training courses like animal movement courses as example). For early career researchers we need concrete projects -> requirement document for ultimate visualisation (solving req in STSM's or limited number of participants in setting like this meeting).
		• *Action to meet above aims:*
		    o *Draft requirement doc with concrete projects (all)*
		    o *Add examples of GPS tracking in weather radar cases shown by flow visualisation (show cases)*
		• *Infrastructural start for weather radar data & tools will be discussed in WG1 (meeting later this year).*
		    o *JSB drafted a document based on FlySafe infrastructure as a guidance. PD, HvG comment on document.*
		    o *PD option for LifeWatch at INBO to setup in the cloud*
		    o *Finally when switching from research to operation services Lifewatch is the way ahead (PD)*
		    o *Suggestion for WG1 to write 1 A4 description facing major infrastructure for discussing with potential funders*

12:00		Lunch
13:00		Subgroup session.
15:00		Subgroup session *Note several sessions continued until midnight*
	C 4.220	Available throughout the day for 2-3 people to sit and work
Thursday 11 June 2015		Working at UvA: Jan Klaas, Wouter, Peter, Bart, Judy, Andrew, Garrett
09:00		Subgroup session
12:00		Lunch
13:00		Subgroup session
14:00	B 1.149	Subgroup session Wrap up with team Wouter & Jan Klaas • *Attending: JSB, PD, BA, AF, GB, WvdB, JKvdM, MS Updates to TIMAMP presented, use of different background maps, implementation of US data, exploration of unexpected differences in vector sizes, discussion regarding presentation of time and other fine tuning of visualization* • *Updates of flow visualization shown, different ideas for presenting density explored, new base maps shown, different color combinations explored, first*

		preview of forward trajectory model visualization, application of US data shown. Discussion of fine tuning several aspects of visualization.
	C 4.220	Available for 2-3 people to sit and work
Friday 12 June 2015		

10:00	B 0.203	Presentations
		   - STSM Peter & Bart
		   - Progress paper
		   - NEXRAD, Garrett
		   - KNMI meeting
		Attending: PD, WB, BA, AF, GB, HL, JS, HvG
		• *PD demonstrated the new FlowViz (viz-2) visualisation to the group with all new features. Discussion on how to present the density resulted in a preference for heat map. The SQL query was discussed during the week and further improved (validated against flysafe website)*
		• *PD demonstrated a new visualization in CartoDB, showing the forward trajectory model (ref Shamoun-Baranes & Van Gasteren, 2011) of birds measured by air defence radars and taking off in N-Netherlands and E-Belgium against wind flows. This viz nicely showed two different flows in one viz. Results will not be part of the paper, but shown as CartoDB pages, with data on GitHub (announcement follows).*
		• *FlowViz was demonstrated on US dataset with 13 radars. Improvements should be time resolution (from 1 hour to 6 min), including weather as grey layer and wind borne movements (insects?) vs powered flyers (birds)*
		• *JSB and AF showed their outline of a paper ('New tools for flow visualization shed light on nocturnal migration')*
		• *They already pre-submitted the abstract to high ranking journal, which accepts 1500 words and 1 or 2 figures. 4-panel figure was discussed with example of FlowViz & TIMAMP on US and NL/B dataset. Plan B will work towards the same paper be published in another journal. Some discussion on publishing results on website during launching the paper will depend on plan A & B in combination with developed website by WvdB (September).*

12:00		Lunch
13:00		Wrap up and finish • *All participants really liked this way of working in small subgroups. Great progress on both cooperation as well as results were created. For future WG3 meetings this kind of way of working was proposed. If we combine this with early stage*

		researchers a maximum of 3-5 would be acceptable but takes a lot of extra time, would require clear definition of sub tasks in advance and someone to coordinate the work.