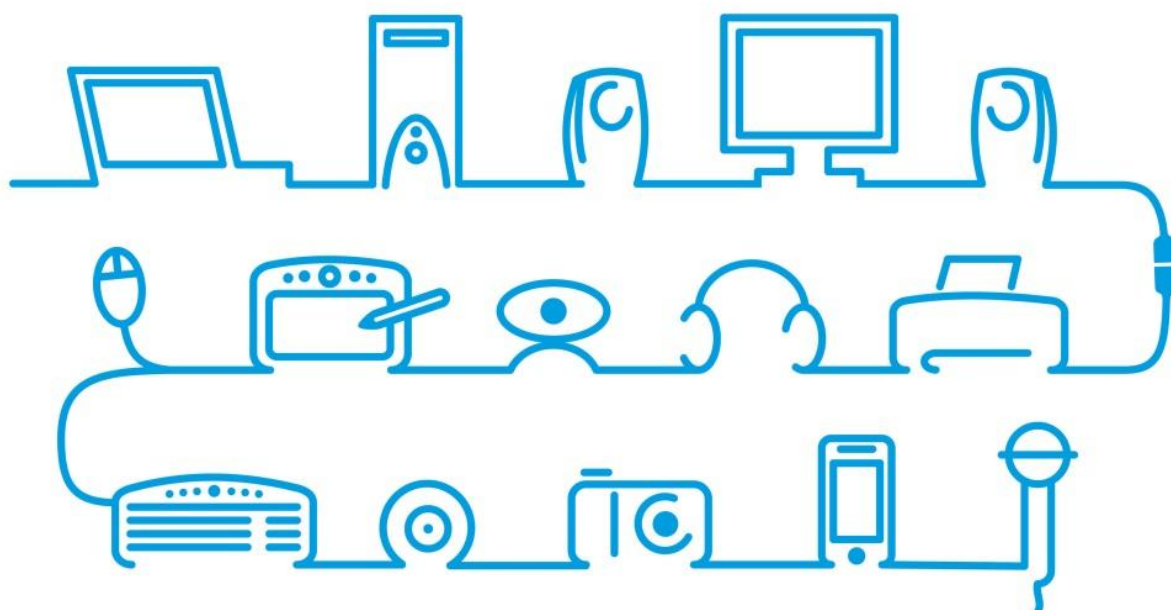# TO L0G OR NOT TO L0G?

Risks and benefits of emerging life-logging applications

Appendix I Scenario Building and Analysis Template

ABOUT ENISA

The European Network and Information Security Agency (ENISA) is a European Union (EU) agency which acts as a centre of expertise for the EU Member States and European institutions. It gives advice and recommendations on good practice, and acts as a "switchboard" for exchanging knowledge and information. The agency also facilitates contacts between the European institutions, the Member States, and private business and industry.

CONTACT DETAILS

The report has been edited by Barbara Daskala.

For questions related to this study or to the Emerging Risks Framework, please use the following details:

e-mail: RiskManagement@enisa.europa.eu

Internet: http://www.enisa.europa.eu/

Structure of the template

The template is structured as follows:

- Introductory part, where the motivation, scope and objectives of the scenario is provided, as well as the approach and methodology to be used

- The Scenario description, including the following information:
  - *Scenario type*: explorative (*what can happen*) or predictive (*what will happen*)
  - *Scenario raw description*: this is where the scenario is described in free text. The intended text in italics provides more technical information on how certain activities are performed. These details are not necessarily those of which actors are fully aware as they happen in the background.
  - *Assumptions*: Any assumptions made while formulating the scenario.

- **"Analysing the scenario" –** This section contains a number of fields with information we would like to know to proceed with the risk assessment as a next step. It should be noted that this part of the template is the one populated first to provide the basic idea and components of the scenario, on which it will then expand on. The information presented there is thus more general and abstract and should be considered only as background information.

To log or not to log? *Risks and benefits of life-logging applications*

Annika, a professional mum, and Bennie, a self-employed dad, live together with their 12-year old son Christer and their 14-year old daughter Dana in Malmö, Sweden.

Morning at home

As the alarm goes off in the morning, Bennie grudgingly makes his way into the bathroom. The smart mirror that also allows his son Christer to play his favourite "Brushy" game (in which he competes with his friends on who brushes the teeth best) detects his composure using image recognition and gets ready to auto-blog his ritual "morning riser" message to his social network: After the system plays a little sound snippet from his wife saying "How are you today, Bennie?" his mumbled reply ("Ready to rock and roll!") is simply submitted to an online speech-to-text service and then combined with one of four possible composure icons (as indicated by the image recognition system): *grumpy*, *sleepy*, *fresh*, or *energized*. As Bennie got a good night's sleep, his icon is "energized" today. A glance to his "friend stream", which is projected to the side of the bathroom mirror, shows him that Dan, his best friend, is also already up – though his night must have been short: Dan's icons says "grumpy" and his message is "Don't Ask!"

Dana and Annika are already at the breakfast table when Bennie comes down, seemingly in a heated discussion. "Mom, I'm *fine*, really, it's nothing!" Dana says, though Annika does not seem convinced by this. "She hasn't posted any status updates for more than 2 weeks now", Annika offers by way of explanation as Bennie looks at her inquisitively. "There must be some reason to it, I'm sure, but she won't tell me." Bennie tries to calm her down: "C'mon, Annika, if it wasn't for my bathroom and my bike doing the updates for me, I wouldn't be posting anything either. What's the big deal?" As Annika gives him a "you-are-not-being-helpful" look, Dana quickly mumbles "I have to get ready for school" and slips upstairs. "Bennie, I'm just worried. What if she is being bullied? We really should talk to her teacher about this." Bennie sees the worried look on Annika's face and decides not to press his point: "OK, you know what? I'll check on her as I walk her to the bus stop." Annika seems to have more on her mind though: "I'm also worried about her working late at Krista's house so often. She has been there practically every night last week, presumably to work on some school project. How do we know she is actually there working and not going out or something?" "Relax Annika, I remember checking her lifelog last week and she was definitely at Krista's all of these days," Bennie replies. "But how do you know she didn't just leave her phone behind at Krista's and go out the whole night?" Annika retorts. A good point indeed, Bennie must admit to himself. "Hmm, I guess you're right. A few days ago I would have said there's no way that Dana would move more than a few meters away from her phone, thus not being able to update her social network on her activities minute by minute. She would have sooner walked out of the house naked than without her phone! But if she stopped her updates as well…" "See? This is why this worries me…" Annika adds. Earlier that year Bennie had convinced Annika that they needed to give Dana a bit more freedom. Annika had been reluctant, but in the end Dana agreed that she would give her parents access to her location data in exchange for having more freedom to go out on her own. Maybe he shouldn't have pushed so hard for this, Bennie now wonders. As Dana reappears a few minutes later with her school bag in hand, Bennie quickly finishes his coffee and offers to walk with her to the bus stop.

Travel to work/school

As Dana and Bennie step out of the house, Christer is just coming down to have breakfast. When he woke up this morning, he immediately saw that Einar, his best friend at school,

had posted a "sick-at-home" message. "What fun is school if Einar isn't there?" he thought and decided to stay home as well, yet his mother wouldn't have any of it. While munching on his cereal and scanning his friendship streams, Christer's mood suddenly rises rapidly: it seems that Freia is taking the bus today! Her Avatar is currently aboard the 983 from Staffanstorp, which means that she will be passing by his bus stop in less than 20 minutes from now! This is his chance to "accidentally" meet her on the bus! Since Christer had been keeping tabs on Freia for a few weeks now, he knows that her parents usually drive her to school. Maybe they're busy today? While they aren't friends yet and thus Christer shouldn't know her location, it turns out that Freia didn't yet change the default settings in their school's social networking app! Luckily his school is using a self-hosted free networking software, rather than going with a commercial service as they do at his sister's school. While his school apparently is saving money this way, having the informatics teacher double as the sysadmin already allowed Christer and his friends to run a number of "work-arounds" on the stupid class check-in service that they have to use in order to comply with attendance. In the same way, Christer simply befriended Gitte, one of Freia's friends, in order to get access to all of Freia's details, too! But maybe after today's meeting on the bus, sending that "connect" request wouldn't look like he likes her, right? Right!

Annika is still a bit bewildered by her son's sudden behavioural change – first he didn't want to go to school at all, and now he absolutely must catch the earlier bus. Kids! Annika hears his footsteps running away as the front door slams shut, and she finally finds time to check on her own travel plans. It looks like traffic is light this morning, so she might as well skip taking the bus today. As she starts her drive into town, however, her mobile phone provider sends a traffic alert to her car's navigation system: Seems as if there are a lot of non-moving phones up on the Sallerupsvägen onramp. "Probably an accident" she thinks as she accepts the alternative route suggestion. As she prepares to turn at the next signal, her new route plan is automatically shared back with her mobile phone provider, which uses this information to improve its already excellent traffic forecasting system. Usage is free for Annika, as long as she agrees to share all of her travel information as well. She could of course also opt-out at any time, though she always felt that paying 39 Kronas per month for this was a bit steep. While Annika is driving down Toftanäsvägen, her car monitoring systems detects first signs of wear and tear in the two front brakes and makes an entry on the myVolvo diary that Annika signed up for in order to keep up with the car's maintenance. It supposedly also helps with selling the car later, Annika had been told, as prospective buyers could get a first hand impression on how the car was handled by the previous owner. Annika usually never bothers to check that diary, and has set the car to never bother her as well with what information it is uploading. However, as Annika enabled the "CareFreeCar" app inside her diary, any safety relevant entries are directly copied through to her preferred garage, allowing it to contact Annika for scheduling a check-up.

As Dana is walking down to the bus stop, she tries to reassure her dad that there really is nothing wrong with her, and that she had simply forgotten to update her status for a while. Of course, she won't tell him about how that school network is really only for kids (she's 14 now, after all, and having your parents be on your friends list is really for 12-year olds like Christer!), and that ever since Leif invited her to that peer-to-peer based social darknet, she'd been doing all her postings there. She's still quite psyched about that invitation: Leif's already 16 and has a motorcycle! Plus: being in a decentralized and thus unregulated network means a complete different kind of postings. No parents or teachers who watch!! Of course, it took her some time to configure her phone to post its updates to the darknet instead of the school's network, while still routing her school check-in's to the

official pages so that the school wouldn't notice her dropping off. However, she should probably reconfigure her control scripts so that a few more updates get sent to the school network after all. While her mom is quite the computer wizard, eventually her teachers would also note her lack of posts. But it was already hard enough to tweak her filters so that none of her horse riding classes got posted to the new network! While she still really likes her Shetland pony, posting this to that social darknet won't really do. That would make her look like a 10-year old! Same with her occasionally listening to ABBA on her MP3 player – if that would find its way into her music profile!! She still remembers when her friend Marit's profile had suddenly shown the complete Pippi Longstocking episodes as her favourite "songs"! Some of her friends still have her listed as "Marit Longstocking" in their Instant Messengers. Poor Marit!

Bennie thought that his small chat with his daughter went well. It seems she really just forgot to post for a few days, given all the stress that she is having with that school project. And how should she find time to go out at night with all that school work anyway? Ahh, the beauty of control, Bennie thinks to himself. I guess in my day we could get away with a lot more, without having our parents at our backs all of the time. Maybe Annika is simply overreacting with respect to these missing status updates after all? While Bennie enjoys seeing the occasional update from his friends, he hardly bothers to manually post anything himself. Though with all the auto-posting scripts embedded in many of his devices and appliances, there's still plenty of updating going on, as far as he is concerned. Take for example his bike. As Bennie is cycling to a first meeting with a new client, he relies on his mobile phone to direct him (using voice commands through his wireless headset). However, instead of using his mobile phone provider for directions, he is part of the CycleMalmö online community. Its members can mount a small sensor module directly on their bicycles and thus update city-wide pollution and traffic maps in real-time. In turn, they get to use CycleMalmö's own navigation service that takes both traffic situations (including bike lanes!) and air quality into account. As Bennie has asthma, he also always wears a small sensor patch under his shirt that correlates his bike's air quality measurements with a number of his vital signs, and records this in his HealthStore profile of his local health county council. This way, he and his doctor can inspect his health record periodically to better understand both short-term and long-term irregularities. The aggregated data is also automatically shared with local urban planners. And all this without Bennie having to post anything himself! Talking about convenient…

Daytime at work/school

When Annika arrives at work, she quickly checks the messages that came in over the long weekend. One is a new contact request in her social network from "Helena" down in Purchasing. While the face looks vaguely familiar, Annika cannot really remember meeting her – Helena's message says something about last week's company midsummer fest, but Annika met so many people there that she must have forgotten completely about her. Annika quickly opens her lifelog app and browses through the images from the event. Bennie had given her some really nifty lifelog jewellery last Christmas: a pendant with an integrated camera and Bluetooth module, which takes a picture every minute and sends it wirelessly to her phone, from where her "CloudNote" app then regularly archives it into her lifelog cloud. And indeed, there she is: Helena from Purchasing, in what seems to have been an extended discussion with her and Larson, the IT guy. As she tries to refresh her memories from the image, she realizes that the photo also caught Nils, her colleague from the desk across, while he was apparently picking his nose! Yuck! She'll have to forward this to him later – maybe he'll treat her for coffee if she promises not to share! But back to Helena's email. Slightly embarrassed for not having remembered her, she quickly accepts the request and moves on to the message from Ingemar in HR. Apparently they have been

hard at work rolling out a new pension portal over the weekend and he asks everybody to quickly login and check if they imported the old data all right. With 5 minutes to spare before her first meeting, Annika quickly clicks on the link and enters her login credentials at a nicely designed new portal page. Unfortunately, the system keeps rejecting her password. After trying all of her various usernames and passwords, she gives up and decides to wait a few more days – they will hopefully have ironed out the wrinkles in the new system by then. As she is about to close her email window, a message from IT security comes in: "Warning: Phishing attack posing as an email from HR! Do not follow the login link!" Oops!!

Bennie has since finished his meeting, which they had at a nice bistro over coffee and pastries. Using his phone to pay, Bennie automatically set it to upload the transaction to his MyFinances online service. By tagging it with the client's name, he not only can easily keep track of his various client accounts but also easily file his tax return, including a scanned copy of the receipt (which he snaps with his phone's camera). Incidentally, the rise of such personal finance services has also allowed tax authorities to vastly streamline their operations: as Bennie has opted for the DirectTaxLink feature, he enjoys a 1% tax break in exchange for the instant sharing of all tax-relevant receipts with the national revenue services. As his receipt also shows the bistro's tax identification number, authorities at the same time cross-correlate his purchase with the bistro's tax record, thus improving accounting reliability. While Bennie is using the paid version of MyFinances, there is also a free version that offers much of the same functionality yet also shares personal consumption data with advertisers.

Dana's school day is uneventful, apart from that moment when Lena and Marit ask her to go down to the roundabout with them during lunch break. She almost agrees to come, but luckily remembers that her location profile already streams into the social darknet, and she would thus be logged in the playground section of the school grounds. She quickly mumbles an excuse and as Lena and Marit take off without her, she briefly regrets not knowing how to reconfigure her tracker so that she could still safely venture into the school playgrounds.

As Annika is finishing up, she quickly reviews her day. Due to that false email from HR, she spent all morning on the phone with the company IT helpdesk resetting all her various passwords. Oh well, she should have updated those passwords long time ago, anyway. Good thing she had that "CloudNote" app installed on her phone: she simply recorded her voice as she was repeating all those changed passwords to herself. The CloudNote app streamed this directly into her lifelog account, indexing them in the process so she will be able to look them up in case she forgets them later. Great! Annika delves a bit deeper into her work logs to review her last week. 173 minutes of meetings and 62 minutes dealing with e-mail as the daily average, that's 17% less time in meetings and 31% less spent on email compared to last month – not bad at all! It seems that moving most of her meetings to the morning has paid off, also in terms of work efficiency: her attention levels are up compared to last month, and her level of active engagement as well. If only there weren't those boring client reports to write each week: correlating her engagement levels with those reports, she sees a statistically significant drop of over 73% over her daily average. And of course that slump right after lunch, when she permits herself to catch up on her various friendstreams.

It is really quite a neat work diary system, she must admit. When they announced the availability of the "Getting Work Done"-app last September she was at first highly sceptical, just as all her colleagues: who would want all of their email and other work habits to be monitored?! However, participation is completely voluntary, and management

is apparently only seeing aggregated data. So after she tried it for a few weeks, she quickly got hooked. Using a combination of software and devices, the system is able to track her work activities on her laptop, her company smart phone, during meetings using the AV-system in place for videoconferencing, and even her personal sensor patch she is wearing to track her health levels. All of the various devices and software monitors feed into a single "worklog" in her company portal, allowing her to inspect her own performance and accomplishments. Optional software "advisors" can be used to suggest improvements to daily routines, such as the suggestion she got for moving her meetings to the morning, and not taking that second cup of coffee until later the day. Some wizards in IT even added fun custom modules to the system, such as a badge system (last month, before she started to lower her coffee intake, she got "Mr./Mrs. Java Jive" twice in a row for her coffee craze) or the "We're in it together!" module that detects two or more people working in similar patterns, and which suggests common coffee breaks. By now, almost all of her colleagues are running the system, even after their initial reservations. And it does feel good to see her efficiency steadily rising, she has to confess. A recently released add-on now supports collaborative inspection of these profiles, which allows them to be used during the yearly performance review – only on a voluntary basis, of course! But given her great performance numbers, she certainly will only benefit from discussing those figures with her boss.

Leisure evening

Back home, Christer is in a foul mood. The planned "connect" with Freia didn't go as planned: although she was on the bus as predicted, Christer did not muster the courage to talk to her when he saw her sitting in the last row of seats. At least he got assigned to the same study group as Freia today, so maybe that would be a good enough reason to befriend her? He logs into their school's media system and begins his homework, only to notice that Freia is logged in as well! "Focus! On! Homework!" Christer tells himself, trying to keep his cool. He nonchalantly acknowledges her on the chat channel and sets out to do the assigned research: they are supposed to create a set of Web pages on deforestation. He quickly checks the log of Freia's action that the system automatically keeps of each student, in order to allow the teacher to understand each student's contribution. As he finds and adds statistics, charts, and other media material, he occasionally (and in quite a cool fashion, Christer thinks!) contacts Freia over the chat channel to coordinate. Time flies by and by the time Freia has to leave as her mom is calling for dinner, Christer realizes that he spent the last half hour chatting! Yeah! Though with a few seconds delay comes the realization that all of this is now archived in the school's media system, accessible to all class members! Ugh!

Not wanting to feel more embarrassed than he already is, Christer abstains from going through the chat log once more to see if he might have given away too much, and fires up his "Nebula" gaming center app. His dinner seems to be a few minutes off, so he might as well relax a bit with a quick bout with one of his e-sport team members. And indeed, Joe from Atlanta is online, and they quickly battle it out on a small map, against two guys from Belarus – who really don't stand a chance against Christer, he thinks, still a bit giddy from the chat with Freia and ready to take on twice as many opponents! And indeed: soon enough their two opponents fold, and Joe and Christer earn the "PWND_in_10" badge for such a quick victory! Of course it is precisely at the medal presentation ceremony clip that his mom has to enter, calling him for dinner. "Another medal, young man?" she dryly remarks. "I thought you'd be doing your homework, but instead you are spending all your time online again! You better enjoy the sight, because I'll be locking down your game account for the rest of the week!" "But mom! I really..." But with his mom already on the way down again, Christer's protests remain unheard. While he really liked those medals

when they started out, he realizes now that his online record might indeed give his parents a completely wrong impression. How are they to know that he can earn 3-4 of them in only 20 minutes of gaming? Ahhh, parents!

After dinner with a miffed Christer and a pensive Dana, Annika sends both of them to bed early in order to have some time to get herself on top of things again. She had let too many things slip over the last weeks, she tells herself. First off, Annika checks on Danas updates: "Good, she posted something again today. Maybe having Bennie talk to her really helped." She then calls up Christer's various blogs and school media records. Using a convenient online scripting package, she had spent a full weekend last February to create a small set of mash-up pages that pulled in all of her children's various records into a convenient 2-page report. That came indeed handy now! 39 new medals in the last two weeks alone?! Incredible! "Good thing I decided to cut off gaming for this week", she thinks. Though total playing time of only 146 minutes, so that would only make it some 10 minutes per day, hmm. Maybe I was too harsh? But really: who are all these people? Joe from Atlanta?! I really should be watching his friends a bit more. But school activity is up, and it seems a girl is involved?! Interesting: his activity records seem to increase whenever that Freia is in his class. A quick cross-check with Dana shows that she is still mostly spending time with her long-time friends Lena and Marit. No boys yet for her, so one less thing to worry about! She really is amazed at that data-mining pack that she subscribed for on her mashup page – it really does find some interesting correlations!

Before she goes to bed, she checks her email one last time, only to find a new message from the Riseberga neighbourhood council: since her public driving record indicates that she takes the Toftanäsvägen road regularly, they are inviting her to join a planned online referendum against the city's plans of widening it into a four lane road. She briefly wonders if her tweets against last year's highway extension made them target her specifically, hoping that she would join them. In fact, widening that road should make her morning commute easier. Maybe she should talk to Bennie about this – he must have gotten a similar invitation, given his activity at CycleMalmö. In any case, she really should check again who is on her follower's list – it sure looks as if a few bots are automatically interpreting her postings.

Bennie indeed got the same message, and already signed up for the referendum. He also got an interesting offer for a new car insurance that offers some 15% lower premiums than his current insurer. Bennie was expecting this though, since Karl from the cycle community had already told him last week about this: apparently they had been targeting community members nationwide who posted more than 50 days of bike commute per year to their public notice boards. However, Karl's offer had been even lower, if Bennie remembers correctly. "And I have way more bike commute days than Karl!" Maybe it has something to do with Karl living 10 minutes further out the city?

Oh well, he really should be getting ready for bed, so Bennie quickly logs into his asthma community web for a last check on the activity there, and ends up posting a few of his vital stats to a poster from Stockholm, who asked if this summer's ozone levels affected others as hard as him. Bennie's data clearly shows how significant ozone levels are affecting him, so that should give the poster some comfort. He is really amazed at the accuracy of his new sensor, too. He still remembers when his health insurer had given out free sensors a year ago, allowing participants to upload vital data to the insurer in exchange for discounts on the monthly premium. Bennie was the first to sign up, expecting some significant savings due to his daily bike commute. He was thus quite surprised when, after 3 months of use, he received an "invitation" for a medical check-up to "reassess his insurance protection" and some pamphlets on how to deal with obesity. It

took him several weeks and many phone calls with the insurer's hotline until he realized that the sensor had reported faulty blood pressure levels ever since he installed it, resulting in his profile matching that of a highly obese person. Angered by the insurers cheap choice of sensors, he not only got his own set of high quality sensors for his personal use, but also changed to a health insurance without health profiling, even though it meant paying a bit more than before.

As Dana fires off another status message to her school network ("Anybody seen Scandinavian Idol tonight?") she makes sure to quickly post a clarifying remark on the peer-to-peer darknet as well ("Making parents happy by posting to SchoolNet, ugh!"). She also makes sure that she sets her phone to post two additional status messages before midnight, so that Leif does not notice that she had to be in bed by 10:30pm! While things certainly got more complicated ever since she moved networks, she really is thrilled by the fact that no adult will see her messages anymore. Tomorrow she will ask Leif for some help with setting up that fake updater – that sure sounds like a great excuse for contacting him again!

Type of scenario *["predictive" or "explorative" to indicate the nature of the scenario]*	Explorative
Assumptions *[any assumptions made while writing the scenario flow. The assumptions' field is a place holder for information that may concern generic information about relevant legislation, devices, applications, participants, etc.]*	
For the complete list of assumptions, please refer to paragraph 3.1 of the Final Report.	

Analysing the scenario	
Timeframe *[when the scenario takes place]*	3-5 years into the future (rather 5 than 3 years)
Location *[where: Home / work / public space...]*	Home, work, public space, when travelling
Actors *[who: entities relevant to the scenario and describe their roles and goals. These most include*	One middle-class family: Mum and Dad both working (well educated, well-off): Dad self-employed, Mum employed 12 and 14 year old children going to school. Acting in different roles: - working people

humans and organisations but not IT systems.]	- traffic participants - consumers (of goods, of energy, of media contents) - citizens (tax, pensions, …) - patient Service Provider: companies offering free or paid services around the collection and dissemination of user generated (miniscule, nano) content. In most cases, those services are supported by selling information about individual or collective data stored and/or transmitted over their network, e.g., for advertising. Public Authorities / State: interested in learning about the current "state" of the public, and about trends, desires, fears, among citizens, thus wanting to support novel forms of public participation.
Technologies / devices *[technologies / devices that may be used in the scenario]*	**Devices** • phones (next generation smart phones) • Videoconferencing/video messaging (online/offfline) • Home security system (CCTV, door/window lock sensors), remote video surveillance • bracelets (bio sensors) • cars with enhanced sat-nav, congestion detection (brake/acceleration sensors) environmental sensors (pollution) • devices (applications) to sense pollutants • PCs / laptops • smart sensors • smart household appliances • IP TVs **Technologies** • Private life-logging cloud services • smart meters – smart grid technologies • GPS • Decentralised power generation (solar panels, wind turbines) • Software agents (Profiling, agenda planning, health surveillance, etc.)
Applications *[applications that may b used in the scenario]*	• life-logging libraries • e-government sites and ugov applications (for referendums, surveys etc. • taxation apps • traffic navigation apps • government collecting pollution data from households • intra-company and school social network • energy-saving and hot-desking • monitoring kid's behaviour at school (and at home) • virtual games (kids sharing micro blogging, sharing their scores etc.) • parental control for kids' games (see above monitoring) • voluntary micro-blogging of health data / self-monitoring • work efficiency app
Data *[information that is*	• Voltage and power meter data • Location / co-ordinate (routes for buses etc.) data • Car telematics data

collected, or flows through the network, or is being stored and further processed]	• Pollution levels (of pollutants) • Vitals, health data • Activity profile and reports (e.g. of heath exercise and gaming) • Device IDs • Financial transactions (in image format) • Media and books IDs
Drivers *[key drivers behind the scenario: socio-economic, political, environmental or personal motivation...]*	**Socialising / Personal Motivation**: - People enjoy the novel means of staying in touch with existing friends, dispersed family, and like-minded strangers. New technology will feed this drive in ever so many ways, creating a range of consumer products that offer 24/7 connectivity and data streaming to a wide range of centralized services. Apart from regional and demographics differences, network effects will lead to the adoption of particular platforms among large population groups. Eventually, "Continuous Instant Activity Sharing" could lead to almost real-time, high-fidelity, indirect monitoring of large parts of the population through location information, activity data (running, walking, on a bus, etc.), imagery (photo & video uploads), mood feedback (happy, excited, tired). - Learning one's self: people are interested in benchmarking themselves against other people's performances, statistics etc, e.g. am I healthy enough? Am I running enough? **Socio-economic**: The tantalizing promise of "owning" large parts of the virtual representation of the Here & Now, as well as being able to archive this information and mine it for both individual and large-scale intelligence, will continue to drive companies to offer seemingly "free" (or very cheap) services to customers in exchange for (also seemingly) worthless bits of information. Not "knowing" the population in general, as well as the individual customer, will make it increasingly hard for "non-connected" companies to discover trends, offer value-added services, and retain customers. **Political**: - Social networking and continuous activity sharing can also offer valuable policy input, either in form of explicit feedback (a "Like" button for policy) or as a "voting with your feet" observational feedback of citizen activities and preferences, acting also as a tool a government can use to foster citizens' participation in public affairs, and to improve public services. It also offers important statistical feedback, potentially instantaneously, on certain policy decisions (e.g., how does the new smoking ban affect restaurant patronage?). - On the other hand it could be used by the state as a control tool to collect more information on citizens, for national security purposes (in order to enable better profiling etc.) **Corporate espionage and corporate disruption**: An evil-doer, a hacker or an attacker attempts to glean personal information which

	individuals put "out there" and to use such information as a way to hack into or attack a company or government department or a network[1]. On the other hand, companies may use such tools to monitor the activities of their employees.

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[1] "The theft began with an instant message sent to a Google employee in China who was using Microsoft's Messenger program…. By clicking on a link and connecting to a "poisoned" Web site, the employee inadvertently permitted the intruders to gain access to his (or her) personal computer and then to the computers of a critical group of software developers at Google's headquarters in Mountain View, Calif. Ultimately, the intruders were able to gain control of a software repository used by the development team….In Google's case, the intruders seemed to have precise intelligence about the names of the Gaia software developers, and they first tried to access their work computers and then used a set of sophisticated techniques to gain access to the repositories where the source code for the program was stored. They then transferred the stolen software to computers owned by Rackspace, a Texas company that offers Web-hosting services, which had no knowledge of the transaction…. The intruders had access to an internal Google corporate directory known as Moma, which holds information about the work activities of each Google employee, and they may have used it to find specific employees." Markoff, John, "Cyberattack on Google Said to Hit Password System", *The New York Times*, 19 April 2010.
http://www.nytimes.com/2010/04/20/technology/20google.html?ref=global-home

P.O. Box 1309, 71001 Heraklion, Greece
www.enisa.europa.eu