National and Regional Emergency Services Systems

Johan Hedensjö
SOS Alarm, Sweden
**SWEDEN – QUICK FACTS**

- Population: 9.4 million
- 21 inhabitants/km², more in the southern parts, less in the northern
- Area: 449,964 km², fifth largest country in Europe
- Member of the European Union since 1995
- 21 counties
- 20 County Councils
- 290 Municipalities
- 3 metropolitan areas:
  - Stockholm (capital)
  - Gothenburg
  - Malmoe

Approx 1/3 of Sweden’s population lives in the 3 metropolitan areas.
A single emergency number in Sweden was implemented in 1956 (the number was 90 000).

112 is the single Emergency number in Sweden since 1996.

Through 112 accessing instant help from the Swedish joint help organisations (police, ambulance, fire brigade, sea/air/mountain rescue, etc).

The Swedish state is responsible for the number.

SOS Alarm handle 112 centres by agreement with the Swedish government.

Number of:
- policemen: 19,889 (dec 2010)
- firemen: 4,920 full-time, 10,883 part-time (2010)
- ambulance staff: approx 4,000
SOS ALARM

- Publicly owned company, owned jointly by the Swedish State and the Swedish Association of Local Municipalities and Counties.
- Operating the emergency number since 1973.
- Services also include rescue and healthcare services e.g. ambulance and fire/rescue dispatch, security and call center services.
- Approx 10,000 112-calls a day = appx 3.5 million a year.
- Of these, 1.5 million calls result in some kind of action taken by the 112 operator.
- 18 SOS-centers, 16 of these handling 112-calls.
- 3 technology nodes securing redundancy.
- 900 employees, of which approx 650 SOS-operators and registered nurses, managing health care services.
- 134 operating clients.
• 96% of the Swedish population is aware that the Emergency number in Sweden is 112 (“best in class” within the EU).

• Only 38% in Sweden knows that 112 can be used all over the EU.

• The amount of people in Sweden who said that they had received information about 112 is 33% which is an increase from the last survey with +10% points.

• Public information is mainly targeting three groups: children and youth, the elderly, and immigrants.

• SOS Alarm arranged the European 112-day in Sweden 2012 for the third year in a row.

Source: Flash Eurobarometer No 339,(2012)
112 GIVES YOU ACCESS TO ALL SWEDISH RESCUE SERVICES

Concerned authority in the event of an impending crisis
WHEN CALLING 112 IN SWEDEN...

• 112 call is routed to the closest SOS Centre, if not answered within 5 seconds transferred to secondary centres.

• Incident Type Protocols.

• Criteria based dispatch and interview support.

• Response level and rescue agency determined.

• Multi-agency response to larger incidents.

• Access to local, regional and national authorities.
LEVEL OF EMERGENCY SERVICE INTEGRATION WITHIN CONTROL ROOMS

- **SOS Alarms** operational platform is called Zenit and contains the system Coordcom G5 (developed by Ericsson), a digital map called ResQMap and a backup system.

- The **rescue services** having their own rescue centrals use the same system and are therefore able to share data simultaneously.

- **Ambulance dispatch service** is handled by SOS Alarm, except in four regions which do not share the same system and therefore are not able to share data.

- **The Police** use a different system, but is currently planning to either change or develop their current system to be able to exchange data with other emergency services.

- A project is ongoing, supervised by the Swedish Civil Contingencies Agency (MSB), where a number of authorities and organisations are looking into the possibilities of sharing system, or at least sharing a common interface, with the goal to share information easy and efficient between them (SOS Alarm, Police, Coast Guard, Customs).

- Throughout Sweden, the SOS Alarm centres and the fire/rescue service are co-located in the same building.

- A project is ongoing in the Stockholm area with the aim to share the same building with SOS Alarm, the rescue center for Stockholm, the traffic management centre in Stockholm, and other organisations.
EMERGENCY CALL STATISTICS 2011

- SOS Alarm received a total of 3,5 million 112-calls.
- Of these some kind of action were taken in 1,5 million calls.
- The percentage of calls related to emergency was 44,7%, i.e. more than 50% of the calls to 112 are false calls.

Numbers for 2011 are not included but are similar to 2010.
REJECTED CALLS TO 112 IN SWEDEN, 2011

- Call about known accident
- Referred to other help
- Referred to police 114 14 (not emergency)
- Silent 112-calls (no one there to speak to)
- Exercise/Test
- Hoax calls, mischief calls
- Other 112 (no other category is applicable)
- Not 112
- Didn´t know that they called 112
- No action taken

Other 112: 8%
Call about known accident: 12%
Referred to other help: 6%
Referred to police 114 14: 6%
Silent 112-calls: 9%
No action taken: 45%
Joke calls, mischief calls: 6%
Other 112 (no other category is applicable): 6%
ACTIONS TAKEN TO MINIMIZE REJECTED CALLS

• In 2002 a delay was implemented on fixed calls. Dial 112 and then a fourth digit within 3 seconds, your call is not connected to 112 (effect: approx -50 000 calls from 2001 to 2002).

• Dialing 112 from a phone with no subscription (no sim-card, routed etc) the call is redirected and a spoken message advises you to press “5” if you really have an emergency (effect: last year 564 141 calls whereof only 34 514 pressed 5).

• Test in four counties in Sweden 2011, where a delay of 3 seconds is implemented on 112-calls from mobile phones, hoping to reduce the 640 000 “silent” calls (effect: reduced the number of silent calls with 13,3% in the four test counties last year).
TARGET RESPONSE TIME

Target according to the agreement with the Swedish state:

- Average response time below 8 seconds in total over the year.
- Not more than 8% of the 112-calls should have an average response time over 15 seconds.
- Response time maximum 30 seconds.
NETWORK AND REDUNDANCY

- All of the 18 SOS-centres work in the same operational system – Zenit.
- All of the 134 work stations (Zenit) are connected to each other in a network.
- The SOS-centres are working in clusters in three production areas, answering 112-calls for the whole geographical area.
- Allows rerouting services to other SOS-centres.
- National production management available 24/7 to monitor call levels and take required actions
- Backup system secures redundancy and is immediate backup in case of main system disruption.
ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

• Text Telephone
• Text Relay Service
• SMS 112 - all calls terminating in two SOS-centres with specially trained call-takers
• Fax
• Total conversation – SOS Alarm is active in the REACH112-project, handling actual 112-calls

The SOS-centre in Örebro is handling the REACH112-calls (the screen far right)
POSITIONING

- **Fixed telephony calls:**
  - positioning is possible when calling 112
  - exact address is collected from phone register (including withheld numbers)

- **Mobile phone calls:**
  - positioning is possible in 94% of mobile phone calls (2011)
  - exception: national and international roamed calls and calls without sim-card
  - mobile operators are obligated to provide this service to PSAPs for free
  - a dialogue is ongoing with the mobile operators to also position the internationally roamed calls
  - in about 70% of the roamed calls the position is estimated to be accurate
  - the position is never a “dot” on the map, but an area
  - the accuracy depends on where you are
  - position is presented on a GIS map almost instantly after the 112-call is answered

- **VOIP (IP-telephony):**
  - exact address is collected from phone register
  - exception regarding nomadic IP, where you bring your address with you (in your laptop)
  - these calls are risky for the emergency service because when you phone with nomadic IP, the address presented to the call-taker is not where you actually are, but where your subscription is registered
  - these calls are therefore separated and handled by one of the SOS-centres

---

**PERCENTAGE OF 112-CALLS MADE FROM MOBILE, FIXED ND IP TELEPHONY (2011)**

- Mobile phone calls: 70.9%
- Fixed phone: 28.5%
- IP-telephony: 0.6%
Sweden has signed the eCall MoU.

The responsible authorities are the Swedish Transport Administration and the Ministry for Enterprise, Energy and Communications.

SOS Alarm is not directly involved in the EU-project HeERO (eCall) but is observing closely.

When eCall is implemented in Sweden it will most likely be handled by SOS Alarm.
CITIZENS FEEDBACKS
SATISFACTION AND EVALUATION

• Complaints may occur directly to SOS Alarm, and partly to the authority which oversees the 112 service, MSB. This can be done directly from the public. Mail contact is the most common.

• All 112 calls are recorded and calls are stored for a minimum of three months.

• 112 service and contract compliance with the State is governed by MSB. Ongoing dialogue with MSB with focus on enhancing quality of service and response times.
• Sweden is currently studying how to use mobile phones to alert the public in a certain geographic area in case of danger (e.g. cell broadcast).

• The alert system today is mainly based on agreements with broadcasting companies to alert the public in case of warnings from the authorities.

• SOS Alarm is the contact point when a public warning is to be broadcasted. SOS Alarm contacts the public service national radio, Swedish Radio, which in turn forwards the warning message to the other broadcast companies involved (radio and TV-channels).

• In the three counties with nuclear plants there are separate local warning systems for the population.
CHALLENGES, PROJECTS

• Implementation of a national information number, to be used for giving information to, and gathering information from, the public in event of a possible crisis.

• Planned implementation of the EU-common number for missing children, 116 000.
CONTACT DETAILS

Johan Hedensiö
CEO SOS Alarm Sverige AB

Phone: +46 8 407 30 00

E-mail: johan.hedensio@sosalarm.se
Thank you!