Report

Global Simulated Emergency Test (GlobalSET)

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by

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1. Background and objectives

'Global Simulated Emergency Tests' or 'GlobalSET' continue the work started in November 2006 of the 'EmCom Parties on the Air'. With the overall aim of providing an opportunity for Amateur Radio Emergency Communications Organisations around the World to demonstrate their capabilities.

2015 marked a change of direction for the event following the experiences of the Nepal Earthquake in April 2015. Previous events had concentrated on increasing interest in emergency communications and developing procedures for passing messages across international boundaries. They were however significant events to organise and although not the intention, many groups treated the SET as a 'real field day' event setting up substantial temporary stations. However, this was discouraging some countries from holding the event more frequently and also raised issues from countries who were far away from centres of population and struggled to make contacts due to poor propagation or difficulties in local time zones. A better and simpler exercise was needed to demonstrate the strength of Amateur Radio Emergency Communications world wide.

The IARU Emergency Communications Co-Ordinators decided that the best way to achieve this would be to have an availability or 'callout' exercise where we would ask all countries with Emergency Communications Groups to contact their members and ask them how quickly they could get on air if required. We would not provide an exact time for the exercise to take place, this would be a surprise to provide a true figure of how many stations could respond. We did however say that the exercise could be at any time, disasters do not just occur at weekends.

The aims of the exercise were;

To show that we can respond quickly and in a co-ordinated manner.
To get groups and societies involved in an event without language, time or propagation barriers.
To update our information about how many radio amateurs around the world are available for emergency communications showing our strength in the hobby.

2. Strategy

Although the exercise concept seems simple, it actually broke into three separate phases.

Pre-Incident

On 6th December the first public announcement was made for the exercise, this is shown below with areas that caused later confusion highlighted in bold.

Since 2006 the International exercises organised by IARU Region 1 have concentrated on testing between countries using the emergency centre of activity frequencies defined in the band plans, and passing formal messages across language barriers.
Some countries are very involved in emergencies but have not been able to take full part because of timing or their distance from other countries.

Following the Nepal Earthquake earlier this year, a new test is required to demonstrate that Amateur Radio is able to respond quickly to an emergency. GlobalSET 2015 will take place, but with a focus on our organisation rather than on how easily groups can set up field stations.

We announce that between 12-22nd December, *the IARU Regional Emergency Communications Co-Ordinators will trigger a call out exercise in their region.* ***The exact time will depend on the Regional co-ordinators and may not be a weekend as disasters can occur at any time.***

We will use whatever means considered appropriate to ask the IARU Member Societies and Groups known to be active in emergency communications to contact their members and ask them how quickly they could get on air if required.
There is a time limit of 24-48 hours to complete their local call out exercise and submit their results through a web form which will make the results far easier to produce than earlier years.

By using a web form it is hoped that any language barriers are removed as online translation tools can be used to convert this into their local language to make it easier to fill in. The web address will be given when the exercise starts and information will be gathered by each region separately.

No one is expected to get on air, so the exercise is independent of any HF propagation problems.

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To get groups and societies involved in an event without language, time or propagation barriers.
To update our information about how many radio amateurs around the world are available for emergency communications showing our strength in the hobby.

Some countries have large (>1500 member) emergency communications groups, in these cases being able to demonstrate that a significant number of members would be available is a success.

More information will be circulated to National Emergency Communications Co-Ordinators soon.

International Alert

This phase of the exercise started when the IARU Emergency Communications Co-Ordinators agreed that we would all have our exercise on the same day and generally on a business day. Choosing a day within the given window of 12-22nd December was not as easy as hoped with many religious festivals, national days or other activities occurring at that time. The 18th December though was the clearest date and each region chose the following times to start the event;

<div style="text-align:center">

Region 1 – 1100UTC 18th December
Region 2 – 1115UTC 18th December
Region 3 – 0001UTC 18th December

</div>

Local availability/callout

Once the message had reached a country it was for them to ask their members whether they were available in one of three time periods, these periods and the reason for asking the question were;

<1hour	Who can be immediately available to respond to an emergency. These people may be deployed or operating without the ability to carry a lot of personal supplies (food, drink etc.) but can be an immediate response.
1-4 hours	Who needs time to get out of work, get home and obtain supplies before responding. These operators are needed to support the developing communications needs and allow the immediate response operators a break.
4-12 hours	Who cannot be available until they finish work, these operators though are the next wave of operators who can provide a truly structured response.

Further information was requested on a webform as follows;

This survey collects the responses from National Emergency Communications Groups about their response to GlobalSET 2015.

1. Please provide your contact information

2. How many radio amateurs are there in your emergency communications group

3. What Date/Time did you start the exercise?

Date / Time

4. What methods were used to contact your members?

Telephone

SMS

E-mail

Radio Networks

Other (please specify)

5. How many amateur radio stations said that they would be available in;

1 hour

4 hours

12 hours

6. What Date/Time did you finish the exercise?

The form was intended to be simple but was perhaps too simple and open to interpretation. It also did not make clear the specific time periods requested.

3. **Results**

A detailed summary of results by region is on pages 9 to 11. The tables of results show the information obtained through the webform with some combining of results by country where necessary. This is necessarily a summary as the instructions were not adhered to by some countries and it was realised that the open questions on the webform allowed interpretation which would distort some statistics. By presenting the summary data though each country can compare itself to similar organisations to see how they performed. However it must be pointed out and emphasised that since the beginning GlobalSET has always worked to the principle, "This is not a contest – this is an emergency communication exercise!"
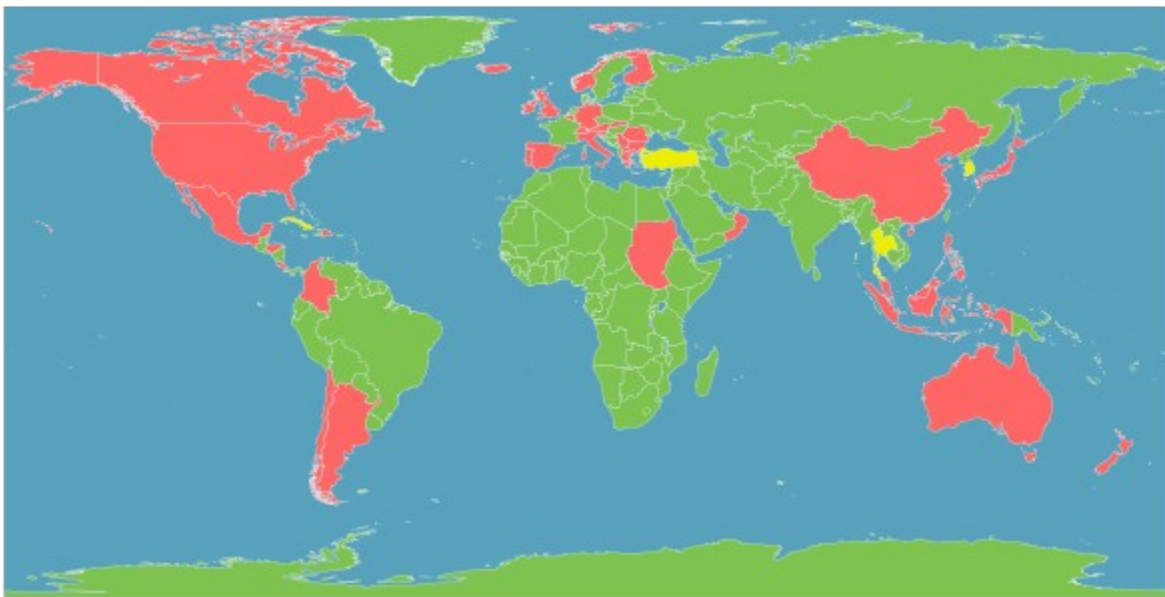

Figure 1
Participating Countries shown in Red, Countries who apologised for absence in Yellow.

Figure 1 shows the distribution of the 38 countries who took part in the event together with four others who recognised the event but could not take part for various reasons. From the figures given this exercise involved groups with an estimated 8466 members worldwide. From that figure 2048 claimed to be available in <1 hour. It has to be said that this is a claimed figure as some countries did not actually provide the summary data as requested but instead passed this responsibility down to the local state, region or even local club level. This produced some results which were difficult to verify so some judgement had to be applied to filter out duplication or overly optimistic results. To balance this however it is also recognised that some countries did not get a response from all their membership (e.g. in the USA only 14 from 50 States appeared to respond).

Another issue with the data was confusion in some countries about the time periods specified. Some assumed that if an operator was available in 1 hour, that same operator would also be available in 12 hours. This would not always be the case due to family or work commitments

but since it could not be determined which countries had gathered their data in this way, only the <1 hour data is considered here.

Even though the data suffers from some flaws due to the very open questions asked, there is enough here to draw out some themes.
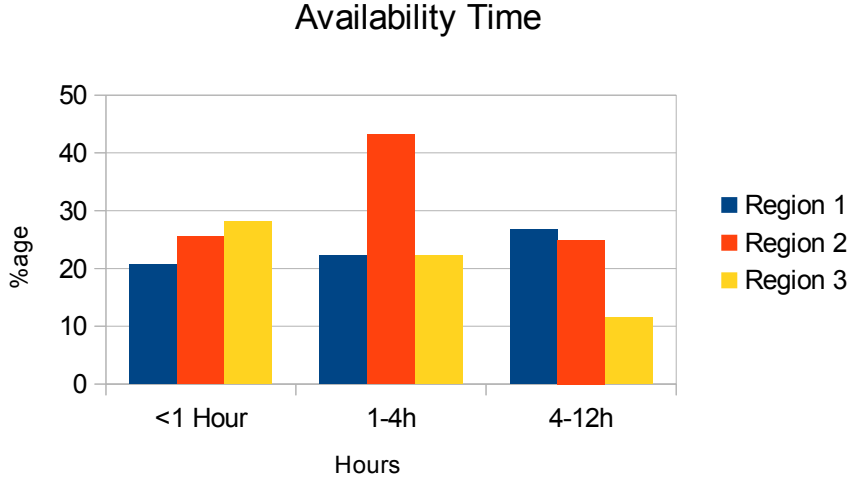
Availability Time

Figure 2

Figure 2 shows the claimed availability times by region. Remembering that this exercise occurred on a normal business day in many countries, an availability rate of 20-30% of stations is very good and does seem reasonable as a planning assumption for future exercises. As previously stated the figures for 1-12 hours may be subject to some errors.

Methods of Callout

Figure 3

Figure 3 shows the distribution of methods of callout by Region. Looking at the detailed summary though it can be seen that 10 of the 38 countries who took part depended on a single

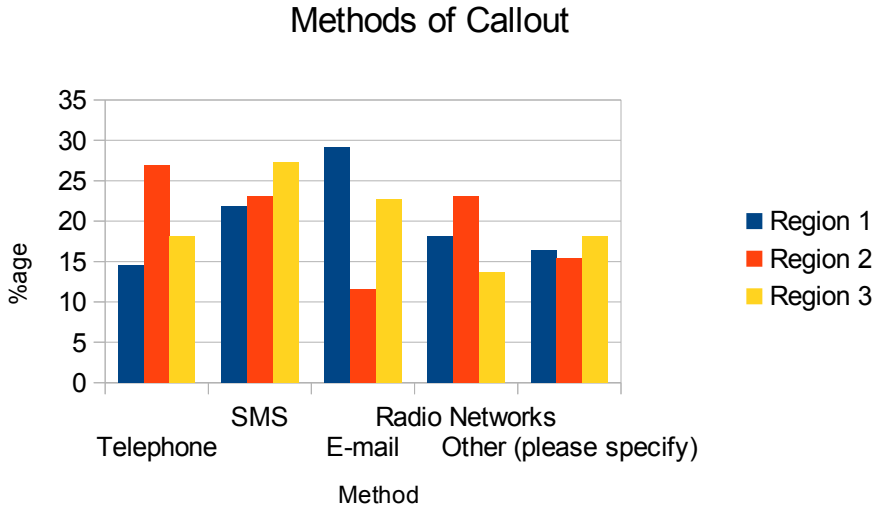method of communications with their members. 25 countries used email as part of their alerting method, from previous exercises it has been identified that email is not a 100% reliable method of communication and it is known that one groups email callout method in this exercise failed because the email address was mistyped and since the originator was not on his own mailing list the failure was not immediately identified. Where possible a mixture of methods should be used for alerting members with feedback obtained for either the delivery of the message or the response.

Of the 'other' methods, Whatsapp emerged as a favourite of many groups. While this mixes Internet and SMS capabilities, groups should remember that any single system is a single point of failure. Whatsapp itself was reported to have been inaccessible on 31st December 2015 in some areas, the cause is unknown but we should remember that any public service is vulnerable to overload and may not be available to us on demand.

4. **Comments**

The exercise has caused some debate in some countries already before these results have been announced. This is a good thing provided that everyone remembers the aim of every exercise is to learn and improve. However some of the comments raised should be addressed here.

"We had no warning..."
The Exercise was announced on 6th December through IARU Emergency Communications Mailing lists and the IARU-R1 website. This was repeated through amateur radio news media websites like www.southgatearc.org , www.arrl.org and also through local language announcements and news broadcasts in some countries. If the information on the event was not passed through to the membership of your country it may be that it was their decision to have a totally 'no notice' exercise.

"It was unrealistic, there was no scenario..."
The author feels that this was realistic on two levels, by providing six days warning of the start of the event this was similar to the warning periods many countries experience with oncoming weather events. Providing no notice of the actual day and time, together with having the exercise on a business day was possibly the most realistic event we could have had. We do not normally get early warning of earthquakes or industrial accidents, they happen when they want, including the business day.
Providing a credible scenario for a Global exercise is always difficult and presents the risk that our messages may be mistaken for a real emergency. Testing our response stage by stage allows this risk to be managed.

"We didn't need to get on air..."
Even though the exercise instructions said "*No one is expected to get on air*" credit must be given to those countries like Norway, Spain and Bulgaria who went further than requested setting up National HF and VHF nets for up to 12 hours after the exercise started. However we recognised that this was only an exercise and was on a business day so did not call for activity on the air.

<u>"We didn't understand what was required"</u>
The organisers of exercises learn as much as the people who took part. Some of the questions were too open and the allowance to complete the exercise in 24-48 hours was taken by some groups to get a better response rather than provide a good test of their capabilities. There was also an issue where the requests or messages were distorted as they were passed through the different levels of Groups or where National representatives misinterpreted the requirements and passed on the webform to lower levels, occasionally posting it to the public internet causing spurious responses which needed to be filtered out.
Next time the questions and expectations will be made clearer.

<u>"Nice exercise and this is needed, because the alert procedures are a major issue."</u>
Having a no notice exercise in a small group or even a country might be put off because it is felt to be difficult. It is known for example that this SET was the first national test for one country for over 25 years. It is hoped that this has proved useful for everyone who took part.

5. <u>Summary</u>

It is felt that the exercise was a success before it even started as it made some groups and countries revise or improve their alerting procedures to be ready for the event.
The number of stations who said that they were available to respond quickly was good but there may need to be more clarity about feeding back that availability quickly.
The event had approximately the same number of countries involved as an 'on the air' GlobalSET but the number of members involved through being asked for their availability was probably ten times more than usual, again seen as a success. It was disappointing that some countries who had felt remote from earlier events due to geography and propagation still did not take part but hopefully this will change next time.
Finally after the success at ITU conferences in obtaining new spectrum, occasionally using emergency communications as a justification we now have good data to support our claims that we are ready to respond when needed.

Thanks to everyone for their support !

IARU Region 1 Detailed Reports

Emergency Communications Group	Country	How many radio amateurs are there in your emergency communications group (Open-Ended Response)	What Date/Time did you start the exercise? (Date / Time)	What methods were used to contact your members? Telephone	SMS	E-mail	Radio Networks	Other (please specify)	How many amateur radio stations said that they would be available in; 1 Hour	4 Hours	12 hours	What Date/Time did you finish the exercise? (Date / Time)	Time to complete callout
DARC	Germany	219	18/12/15 13:00						9	42	37	19/12/15 01:00	12:00:00
RADIO AMATEUR ASSOCIATION of GREECE (RAAG)	GREECE	195	18/12/15 11:18				1		5	27	72	20/12/15 11:18	48:00:00
TURVA (SRAL)	Finland	150	18/12/15 12:16	1		1			6	12	14	20/12/15 12:01	47:45:00
Emergency Comm Switzerland	Switzerland	50	18/12/15 12:15			1			5	15	25	20/12/15 12:15	48:00:00
RAREST	Oman	45	18/12/15 15:15					Whatsapp messaging	35	4	5	19/12/15 15:15	24:00:00
KHARTOUM / Emergency Communication Group	SUDAN	8	19/12/15 20:00	1	1	1		1	8	5	3	19/12/15 23:00	03:00:00
ARES SARA	Slovak republic	148	18/12/15 11:10	1	1	1			32	30	13	19/12/15 16:30	29:20:00
OEVSV	AUSTRIA	205	18/12/15 13:00	1					16	18	5	18/12/15 18:22	05:22:00
B-EARS	Belgium	70	18/12/15 12:30		1		1	DMR and D-STAR network	25	36	50	18/12/15 17:00	04:30:00
ÍRA	Iceland		18/12/15 13:48					Facebook	15	5	10	19/12/15 01:48	12:00:00
Slovenia	Slovenia	56	18/12/15 11:00		1	1			36	6	15	19/12/15 11:00	24:00:00
Malta Amateur Radio League	Malta	13	18/12/15 13:45		1	1			3	2	4	19/12/15 08:00	18:15:00
UNION RADIOAMATEUR OF SPAIN	SPAIN	25	18/12/15 13:00		1	1		whatssap	5	5	5	18/12/15 22:59	09:59:00
RSM	Macedonia	34	18/12/15 16:00	1					20	5	1	18/12/15 19:00	03:00:00
AREN	Ireland	20	18/12/15 11:00	1	1				6	3	1	18/12/15 18:30	07:30:00
REP-SCERA	Portugal	139	18/12/15 11:00		1	1	1	WhatsApp	11	6	1	18/12/15 15:30	04:30:00
RMZO	Serbia		18/12/15 15:16				1				24	21/12/15 00:00	56:44:00
R.N.R.E.	ITALY	300	18/12/15 11:15				1	WhatAp for each specific groups:pactor,satellite,mobile units,national stations,national HQ in Rome	25	50	100	18/12/15 13:30	02:15:00
NRRL Norway	Norway	250	18/12/15 00:00					Telephone and web based alarm syetem	1	33	4	18/12/15 15:00	15:00:00
RVSU-SRR	Romania	51	18/12/15 11:15	1	1	1			12	17	20	18/12/15 12:30	01:15:00
RAYNET	UK	1176	18/12/15 11:03	1	1	1		Facebook, Whatsapp	382	377	422	20/12/15 00:24	37:21:00
Bulgarian rescue emergency radio network	Bulgaria	28	18/12/15 11:30	1	1	1		Internal radio network outside the amateur band. Network in which work simultaneously Civil Protection, radio amateurs, Police and Ambulance		8	20	18/12/15 23:40	12:10:00

Total number of amateurs in emergency communications
3182

Telephone	SMS	E-mail	Radio Networks	Other (please specify)		<1 Hour	1-4h	4-12h
8	12	16	10	9		657	706	851

Percentage used

Telephone	SMS	E-mail	Radio Networks	Other (please specify)				
14.55	21.82	29.09	18.18	16.36		20.65	22.19	26.74

IARU Region 2 Detailed Reports

Emergency Communications Group	Country	How many radio amateurs are there in your emergency communications group / Open-Ended Response	What Date/Time did you start the exercise? / Date / Time	What methods were used to contact your members? / Telephone	SMS	E-mail	Radio Networks	Other (please specify)	How many amateur radio stations said that they would be available in; / 1 Hour	4 Hours	12 hours	What Date/Time did you finish the exercise? / Date / Time	Time to complete callout
RADIO CLUB DE CHILE	CHILE		18/12/15 08:47		1							18/12/15 20:00	11:13:00
RADIO CLUB DOMINICANO	DOMINICAN REP	70	18/03/15 18:00	1			1	whatsapp	20	30	35	19/03/15 07:00	13:00:00
Emergencias CR	Costa Rica	22	18/12/15 09:00	1	1		1	Wathsup	6	5	11	20/12/15 08:25	47:25:00
SERA (Servicio de Emergencia Radioaficionados de Argentina)	Argentina	40	19/12/15 06:00	1		1		Whatsapp (mainly)	1	3	6	19/12/15 18:00	12:00:00
Red Nacional de Emergencia	México	12	18/12/15 01:18					WhatsApp Grupo de la Red Nacional de Emergencia	1	11		18/12/15 21:40	20:22:00
Radio club de Honduras	Honduras	12	18/12/15 06:39	1	1		1		0	12	0	18/12/15 20:50	14:11:00
Lcra	Colombia	44	18/12/15 19:15	1	1		1		13	11	17	18/12/15 21:40	02:25:00
ARES	USA	2961	18/12/15 07:45	1	1	1	1	1	813	523	765	20/12/15 15:15	55:30:00
RAC-ARES	Canada	446	18/12/15 16:00	1	1	1	1	1	66	966	64	20/12/15 11:20	43:20:00

Total number of amateurs in emergency communications

3607

Telephone	SMS	E-mail	Radio Networks	Other (please specify)		<1 Hour	1-4h	4-12h
7	6	3	6	4		920	1561	898
Percentage used								
Telephone	SMS	E-mail	Radio Networks	Other (please specify)				
26.92	23.08	11.54	23.08	15.38		25.51	43.28	24.90

IARU Region 3 Detailed Reports

Emergency Communications Group	Country	How many radio amateurs are there in your emergency communications group (Open-Ended Response)	What Date/Time did you start the exercise? (Date / Time)	What methods were used to contact your members?					How many amateur radio stations said that they would be available in;			What Date/Time did you finish the exercise? (Date / Time)	Time to complete callout
				Telephone	SMS	E-mail	Radio Networks	Other (please specify)	1 Hour	4 Hours	12 hours		
RADIO AMATEUR CIVIL & EMERGENCY SERVICES	MALAYSIA	107	19/12/15 21:00	1	1	1		1 WhatsApp	61	31	7	19/12/15 23:00	02:00:00
AREC	NZ	250	18/12/15 17:00			1			92	43		19/12/15 05:00	12:00:00
CRAC	China	81	19/12/15 13:30	1	1	1		WeChat, Amateur Radio Community Forum	16	39	26	20/12/15 09:00	19:30:00
Philippine Amateur Radio Association	Philippines		18/12/15 17:00		1	1		Social Media	71	104	107	20/12/15 20:00	51:00:00
Emergency Communication Center	JAPAN	2	18/12/15 10:30	1					1		1	18/12/15 11:30	01:00:00
ORARI CORE	INDONESIA	1200	20/04/15 08:00			1	1	whatsapp group	200	150	50	23/04/15 15:00	79:00:00
Tablelands and Townsville Radio Clubs	Australia	37	19/12/15 12:00	1	1	1		1	30	5	2	20/12/15 16:30	28:30:00

Total number of amateurs in emergency communications
1677

Telephone	SMS	E-mail	Radio Networks	Other (please specify)		<1 Hour	1-4h	4-12h
4	6	5	3	4		471	372	193
Percentage used								
Telephone	SMS	E-mail	Radio Networks	Other (please specify)		<1 Hour	1-4h	4-12h
18.18	27.27	22.73	13.64	18.18		28.09	22.18	11.51