

# Survey Results

for

## THE A-SIGHT PROJECT END USERS QUESTIONNAIRE

### Introduction

TETRA/TEDS networks are used for mission-critical communications by public and private entities in more than 120 countries worldwide. It is developed for voice, but today users also like to see transfer of photos and videos being possible over TETRA/TEDS networks.

This is a challenge with today's networks. However, solutions are under development, which will enable transfer of photos and videos over TETRA/TEDS networks.

The purpose of this survey was to collect end user requirements to assure that future solutions meet the requirements of the end users. Those who participated in this survey gave us valuable input to end user requirements for solutions enabling transfer of both photos and videos over TETRA/TEDS networks. The results of the survey are found in the following.

### Questions & Answers

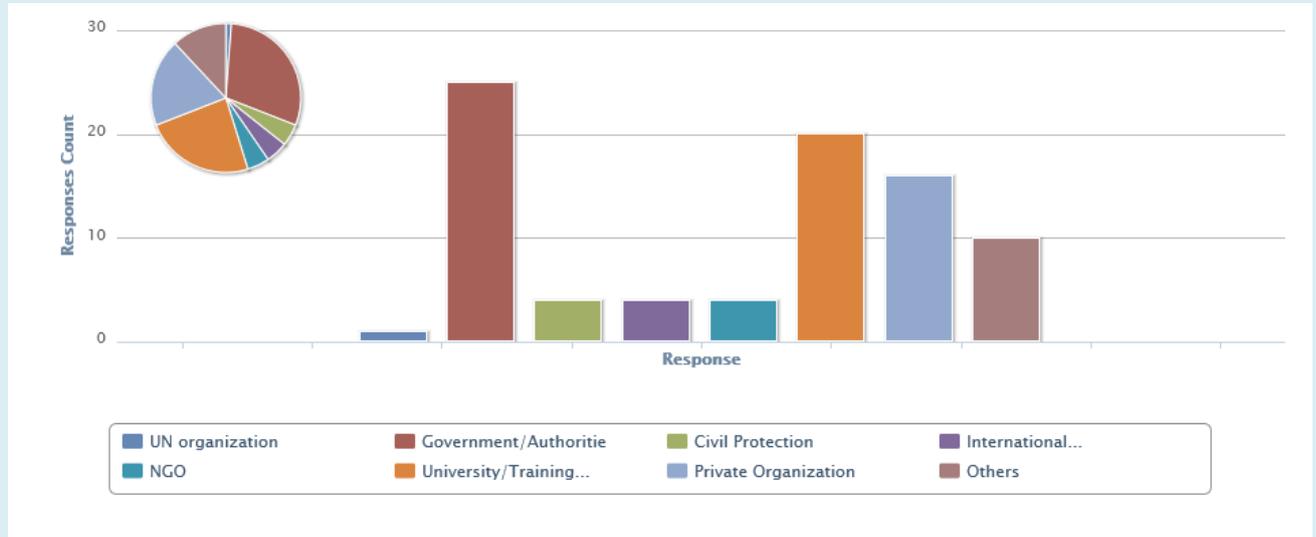
In order to see the results of the different questions in the questionnaire, please, click on the different questions in the list below, and you will be directed to the result of the questions. For coming back to the list of questions, please click on *Back to questions* below the different results.

No.	Questions	Answers
1	<a href="#">Please, describe what type of organization you belong to?</a>	84
2	<a href="#">How many years of operational experience do you have with TETRA/TEDS Networks?</a>	83
3	<a href="#">Are you a TETRA/TEDS user today?</a>	83
4	<a href="#">Do you have access to transfer of photos and videos over your TETRA/TEDS network today?</a>	33
5	<a href="#">If you have access to transfer of photos and videos today, please, grade your satisfaction of the solution on a scale from 1 - 5, with 5 being the best grade.</a>	16
6	<a href="#">Would you like to get access to transfer of photos and/or videos over your TETRA/TEDS network?</a>	26
7	<a href="#">Please, briefly describe the purpose of why you would appreciate the transfer of photos and/or videos over TETRA/TEDS network?</a>	25
8	<a href="#">Solutions under development will be able to transfer photos on normal TETRA networks, while transferring videos will require TEDS (TETRA</a>	32

	<u>Enhanced Data Service). Do you have TEDS installed on your TETRA network today?</u>	
9	<u>For which emergency operational modes do you see photos useful?</u>	84
10	<u>When transferring photos, would you need any additional information tagged to the photos?</u>	82
11	<u>Other information tagged to the photos, please, describe briefly?</u>	21
12	<u>When taking photos at the site, what type of camera would you prefer to use?</u>	82
13	<u>Would you need a fixed mounted camera on a fixed or mobile platform, and would you need to steer this camera from the command center?</u>	83
14	<u>For which emergency operational modes do you see videos useful?</u>	84
15	<u>When transferring videos would you need any additional information tagged to the videos?</u>	81
16	<u>Other information tagged to the videos, please, describe briefly?</u>	14
17	<u>Would you need a fixed mounted video camera on a fixed or mobile platform, and would you need to steer this video camera from the command center?</u>	78
18	<u>Do you need a multi-user system and then how many users?</u>	80
19	<u>Do you need to have user name and pass-word identification of each user at the command center?</u>	81
20	<u>Do you need to have user name and pass-word identification of each user at the field clients?</u>	82
21	<u>Please, describe briefly how you would like photos or videos to be processed for further use?</u>	30
22	<u>Storing of Video and Photo. Do you need to store the transferred photos or/and videos?</u>	81
23	<u>Do you need to store the transferred photos or/and videos and for how long time?</u>	82
24	<u>Do you need a function for remote storage of photos and videos</u>	82
25	<u>Do you need to store photos and videos on external servers (third party storage)?</u>	83
26	<u>Any other specifics you see necessary for the the solutions for transferring photos and videos over TETRA/TEDS networks?</u>	15
27	<u>Do you like to receive the result of this survey, give your e-mail in the text box below?</u>	63
28	<u>Would you like to be available for further dialogue on solutions for TETRA/TEDS networks for transferring of photos/videos, give your name and e-mail in the text box below?</u>	38

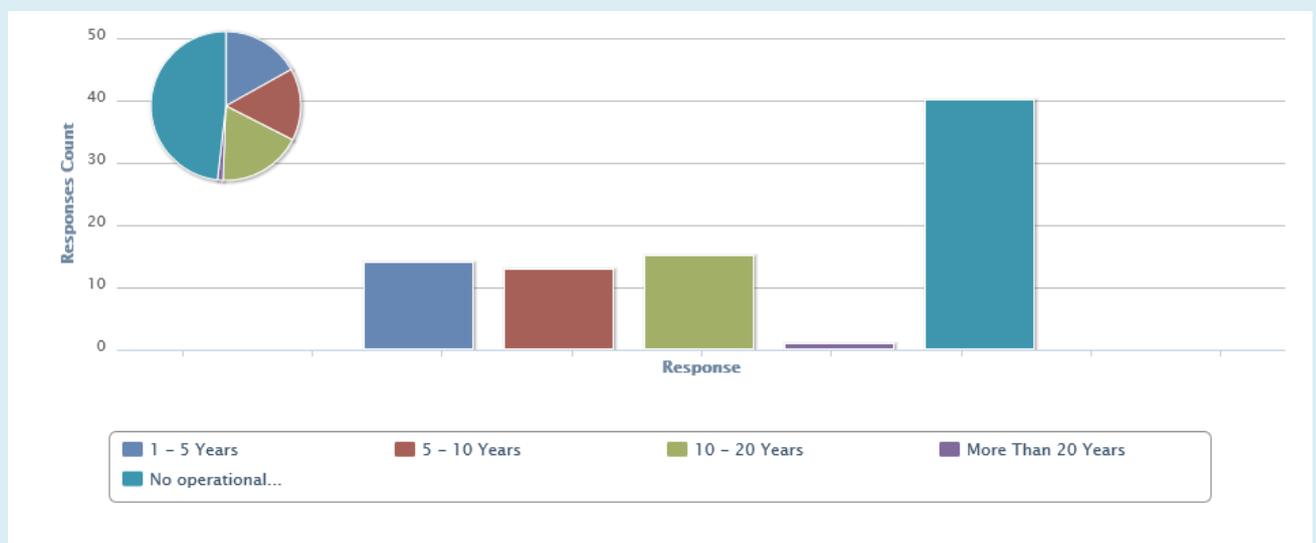
## RESPONSES

### 1. Please, describe what type of organization you belong to?



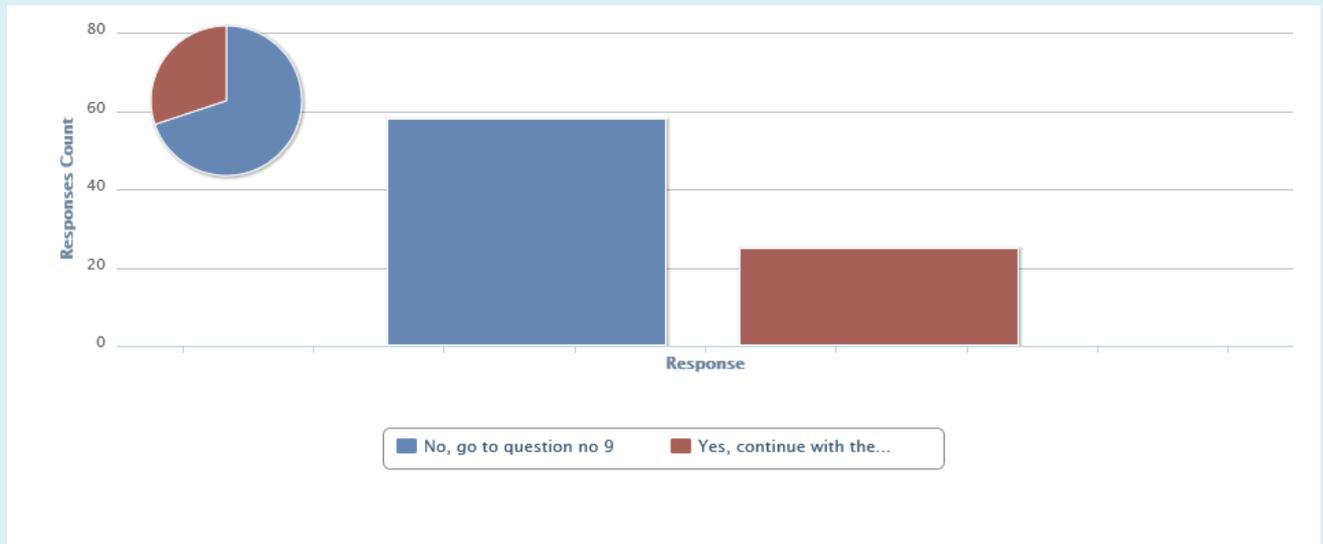
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### 2. How many years of operational experience do you have with TETRA/TEDS Networks?



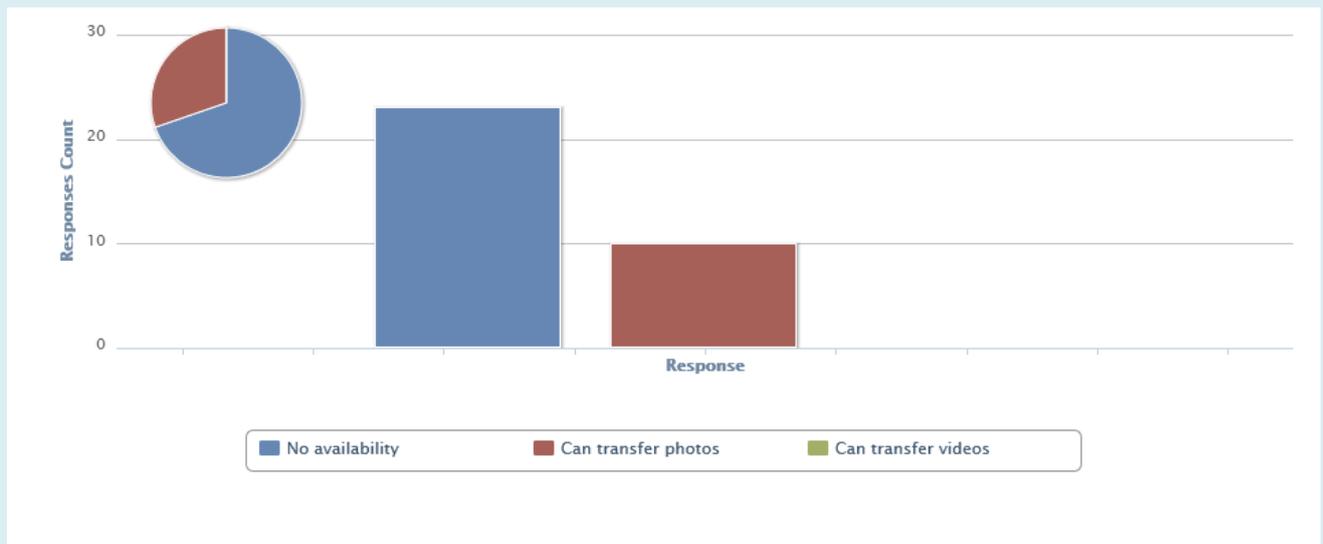
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### 3. Are you a TETRA/TEDS user today?



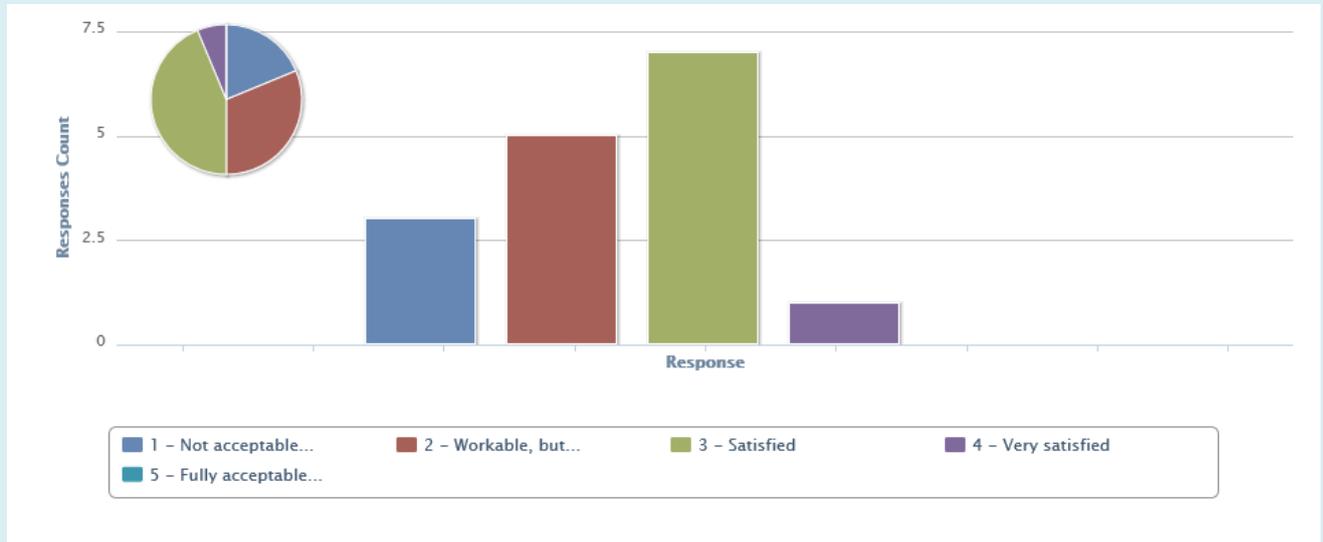
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### 4. Do you have access to transfer of photos and videos over your TETRA/TEDS network today?



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5. If you have access to transfer of photos and videos today, please, grade your satisfaction of the solution on a scale from 1 - 5, with 5 being the best grade.



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6. Would you like to get access to transfer of photos and/or videos over your TETRA/TEDS network?

Photos	23	88.46%
Videos	12	46.15%
# of people who answered question	26	

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7. Please, briefly describe the purpose of why you would appreciate the transfer of photos and/or videos over TETRA/TEDS network?

**Individual Responses** **25** **29.41%**

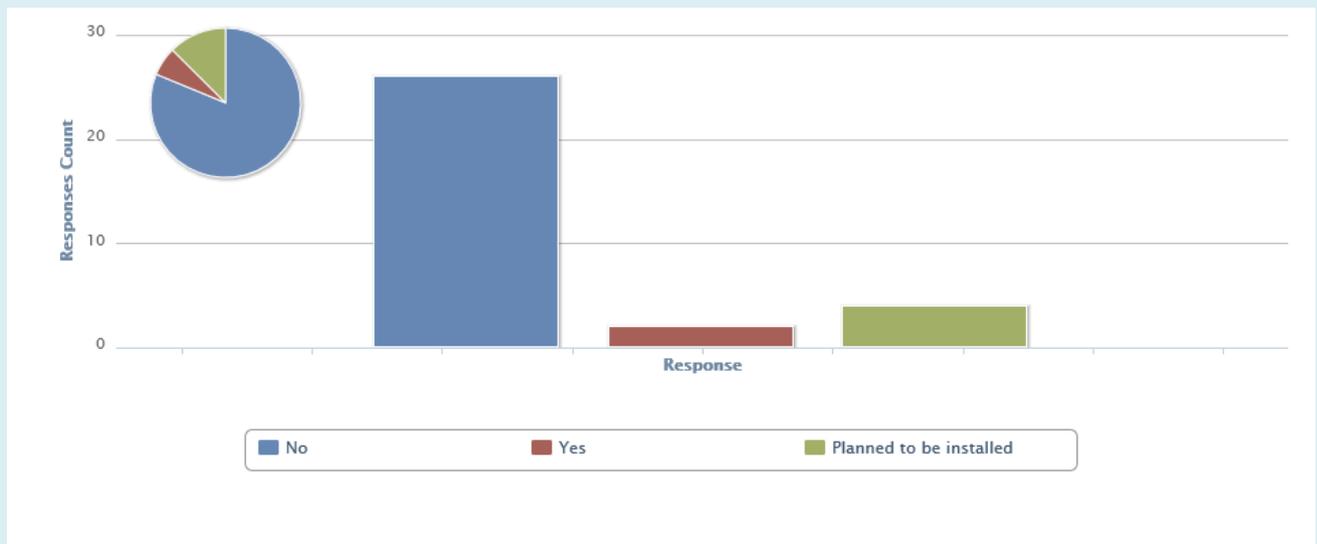
- 1 Situational Awareness, size of the incident, colors effects etc.
- 2 N/A
- 3 To share the visual education to public

- 4 The availability and usefulness of photos and videos during emergencies.
- 5 Missing persons searched criminals/cars situation awareness during incidents
- 6 Firstly, because of exchange of operational information, quicker reconnaissance of other information
- 7 I would like to use photos and videos for training materials
- 8 I didn't experience until now the transfer of photos or videos by TETRA network, just text.
- 9 Better situation awareness
- 10 Evidence material of the incidents
- 11 I need it to transfer maps.
- 12 A photo or a video can tell you more than words about a situation, the look of a missing/wanted person and so on
- 13 (I'm answering based on operational experiences using data on TETRA -- see other entries): Photos (still images) are something that can be used on a production network without causing too much load on the network, especially when using e.g. group data delivery. Video is possible with TEDS, but will use a lot of bandwidth (even if heavily optimized), so deployment on large production TETRA/TEDS networks may not be practical. Even LTE has bandwidth issues with many video streams running simultaneously. Images can be sent from control room to field or field-to-field (e.g. field command).
- 14 For transmitting data from accident site to crisis organization
- 15 Most operational value is perceived in uplink direction imagery, i.e., from the field to the control room. Downlink direction imagery has value but is more limited . The ability of field officers to better inform control room & incident commanders using visual imagery & video is perceived as a great operational benefit.
- 16 Situation awareness. Evidence gathering.
- 17 One photo is like thousand words. It is not just photo, but data transfer - e-mail like mode.
- 18 A shot of the scenario when we arrive will save a lot of communication time and really give an idea of what are we talking about.
- 19 In certain situations it is necessary to forward a quick snap shot.
- 20 Getting a visual situation report (coordination center) / Request for more units (on site); Asking an expert / Getting Information (on site); Getting material for lessons learned, education and public relation (back home).
- 21 For education and training, for operational purposes

- 22 The purpose is to bring to memory or knowledge the events and experiences one had or are on-going in specific circumstances.
- 23 Share with others
- 24 We have to give report about patient from pre-hospital emergency team to hospital emergency department (TETRA) about vital signs-it is faster to sent photo (same with ECG) sometimes we have problems in communication (during using TETRA)when we have to use cellular phone-it is easier to send photo with written message videos would be useful for control in ambulance what we did with patient-for later analysis process of work and control quality
- 25 Fastest and easy.

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8. Solutions under development will be able to transfer photos on normal TETRA networks, while transferring videos will require TEDS (TETRA Enhanced Data Service). Do you have TEDS installed on your TETRA network today?



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9. For which emergency operational modes do you see photos useful?

Mitigation & Preparedness	61	72.62%
Response	69	82.14%
Recovery	44	52.38%

Not necessary, voice should be sufficient	2	2.38%
# of people who answered question	84	

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### 10. When transferring photos, would you need any additional information tagged to the photos?

Map location	74	90.24%
Time	70	85.37%
Scale of the picture	36	43.90%
Weather data	27	32.93%
Other information, please, describe in next question	14	17.07%
# of people who answered question	82	

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### 11. Other information tagged to the photos, please, describe briefly?

<u>Individual Responses</u>	21	24.71%
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- 1 Responsible for the data
- 2 N/A
- 3 Who took picture/person or entity info
- 4 ID of the operator
- 5 Effective impact on society
- 6 Direction of the camera when the picture was taken.
- 7 Objects of Interest, depending on tasks and photos aim in tasks
- 8 In my opinion it is best to stick to the automated geo-tagging formats e.g. exif etc. instead of trying to generate an own standard
- 9 Flooding area, or brief description of the photo
- 10 All information to clarifying the issue.
- 11 Photographer ID
- 12 We can transfer any type of Ms-Office document I presume. I will check other application if are running

- 13 Short descriptive text is key for operational use, e.g. send image with description of task to be performed or information on missing child etc. Also end-user feedback (acknowledgement of image message reception) is important for operational use
- 14 User ID
- 15 Event/accident description is necessary.
- 16 From my more than 30 years experience with the tsunami mitigation it would be most desirable and useful to have some personnel reaction/feelings to/of the event attached to the photo.
- 17 Depending of the situation any of the above mentioned could be used.
- 18 Owner of the picture, first responder, observer, official
- 19 Getting a visual situation report (coordination center) / Request for more units (on site); Asking an expert / Getting Information (on site); Getting material for lessons learned, education and public relation (back home).
- 20 User (originator) profile (various metadata describing actual user - for example linked by user-id to the users database)
- 21 name of operator (consider ethical and legal issues) type of camera

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**12. When taking photos at the site, what type of camera would you prefer to use?**

Smart phone	57	69.51%
DSLR camera	31	37.80%
# of people who answered question	82	

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**13. Would you need a fixed mounted camera on a fixed or mobile platform, and would you need to steer this camera from the command center?**

Camera Direction 360 degrees	30	36.14%
Camera Lens Focus and Distance Control	40	48.19%
Not necessary	31	37.35%

# of people who answered question 83

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#### 14. For which emergency operational modes do you see videos useful?

Mitigation & Preparedness	45	53.57%
Response	65	77.38%
Recovery	39	46.43%
Not necessary, voice is sufficient	8	9.52%
# of people who answered question	84	

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#### 15. When transferring videos would you need any additional information tagged to the videos?

Map Location	73	90.12%
Time	68	83.95%
Scale	29	35.80%
Weather data	31	38.27%
Others, please, describe briefly in next question	10	12.35%
# of people who answered question	81	

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#### 16. Other information tagged to the videos, please, describe briefly?

Individual Responses 14 16.47%

- 1 Responsible for the data. Direction and distance from the camera to the goal point as sometimes it can be a long distance.
- 2 ID of the Operator
- 3 Lessons learned
- 4 Direction of the camera when the video was recorded.
- 5 Same as with photographs

- 6 Videomaker ID
- 7 I never transferred pictures
- 8 Possible practical solution might be to send metadata about available video over TETRA, but the actual video data using another network.
- 9 Event/accident description is necessary.
- 10 See my answer to the question 12
- 11 Depending of the situation any of the above mentioned could be used.
- 12 Getting a visual situation report (coordination center) / Request for more units (on site); Asking an expert / Getting Information (on site); Getting material for lessons learned, education and public relation (back home).
- 13 User metadata as with the photo
- 14 Name of operator (consider ethical and legal issues) type of camera

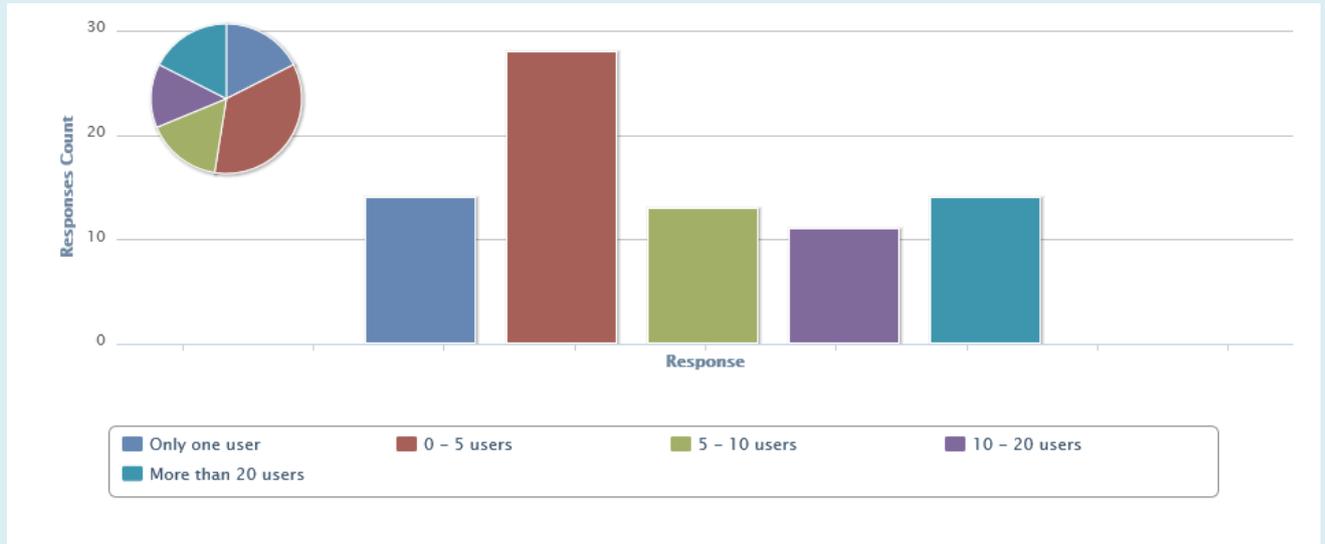
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**17. Would you need a fixed mounted video camera on a fixed or mobile platform, and would you need to steer this video camera from the command center?**

Direction Control 360 Degrees	40	51.28%
Video Lens Distance and Focus Control	42	53.85%
Not necessary	20	25.64%
# of people who answered question	78	

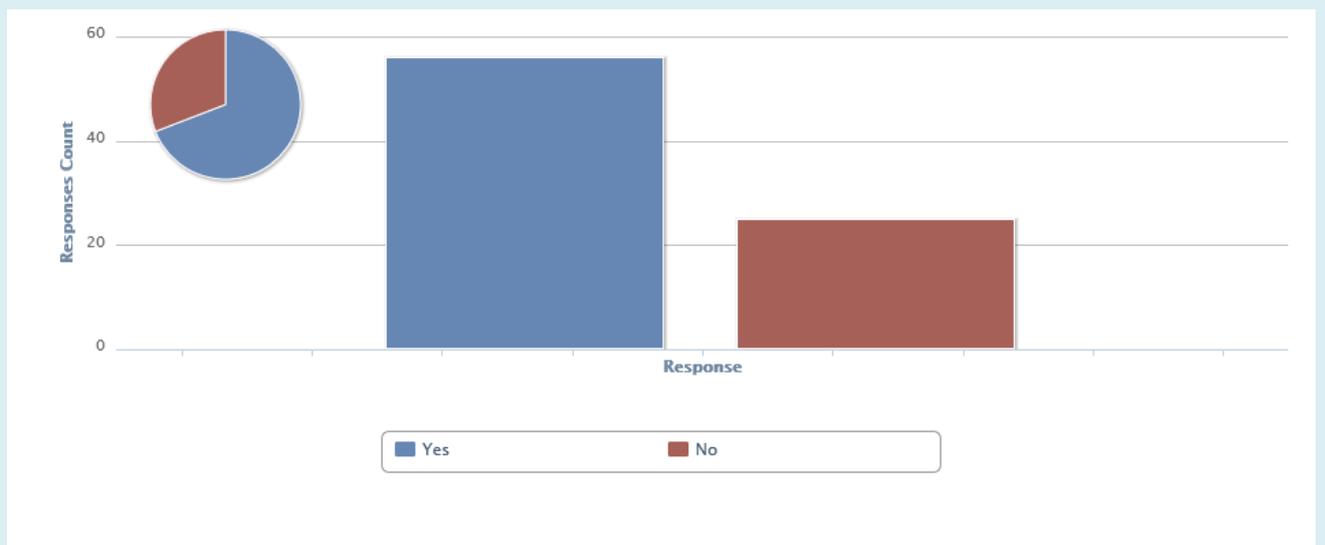
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18. Do you need a multi-user system and then how many users?



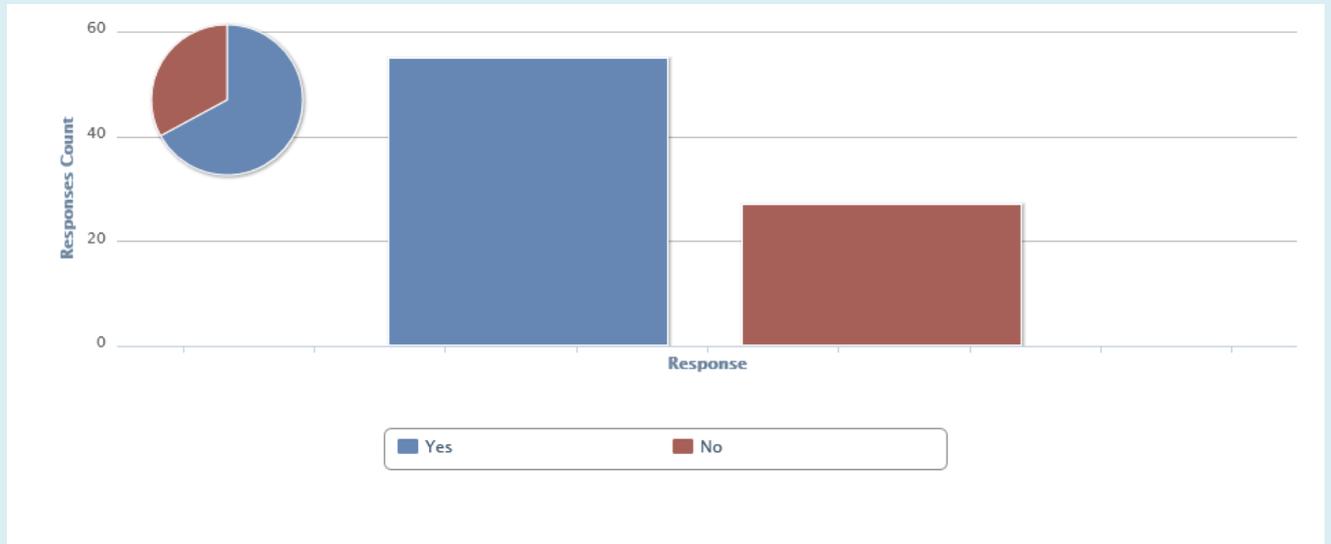
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19. Do you need to have user name and pass-word identification of each user at the command center?



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20. Do you need to have user name and pass-word identification of each user at the field clients?



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21. Please, describe briefly how you would like photos or videos to be processed for further use?

Individual Responses 30 35.29%

- 1 Images allowing the perception of the situation in order to evaluate the perimeter of a forest fire and the upcoming scenarios.
- 2 N/A
- 3 Photos should be uploaded to command support application. Vodeo should be available as a stream and stored in for ex. command centre vehicle
- 4 Image processing
- 5 Identification of the person.
- 6 Interactively linkable or linked to the maps of the area,
- 7 To estimate the scale of the disaster such as area of flooding, area of debris flow
- 8 Easy an with no password

- 9 To reports and briefing new staff / press / decision makers / prepared plans /
- 10 All of the information could be used further in investigation and in processing of evidence, as those used in court.
- 11 Geo-referenced on a GIS
- 12 Photoshop, video software (to turn upside down), enhance clarity
- 13 Stored in the respective case with any audio-log-files, message log-files and case-handling
- 14 Photos and Videos are archived
- 15 Intelligent pre-analysis prior to sending of only relevant data would be useful
- 16 Audit logging, protection against tampering, protection against obtaining image from field device (data protection). These are all possible with Photos to TETRA radios today.
- 17 Very often they are useful in their "raw", unprocessed form. However we have foreseen the linking of video feeds to analytics platforms for crowd & person detection, ANPR, etc. Static Imagery, we have anticipated integration into GIS platforms in near real time, i.e., aerial photographs of an incident site might be over-laid into a GIS system (a Google Earth like system) providing real imagery of the scene
- 18 Tagging and archival in control room
- 19 To be able to add images on the map, and preparing reports with images.
- 20 I am not a specialist in processing photos/videos
- 21 Generally no need of processing
- 22 I like it very much
- 23 On a map and on a timeline.
- 24 Placed with all the metadata to the common situation picture database
- 25 Easier access
- 26 It will be good if they are printable at client level.
- 27 Camera should be seen as a friend of operator rather than a spy. As a consequence images will be used to support communication between the field responder and the distant commander and analysts/experts. Images can be used for lessons learned but they should be used with greatest care and in a well defined legal framework as an instrument to trace performances of responders.

28 To remember more information

29 It should be processed in a professional way.

30 Reports and analysis

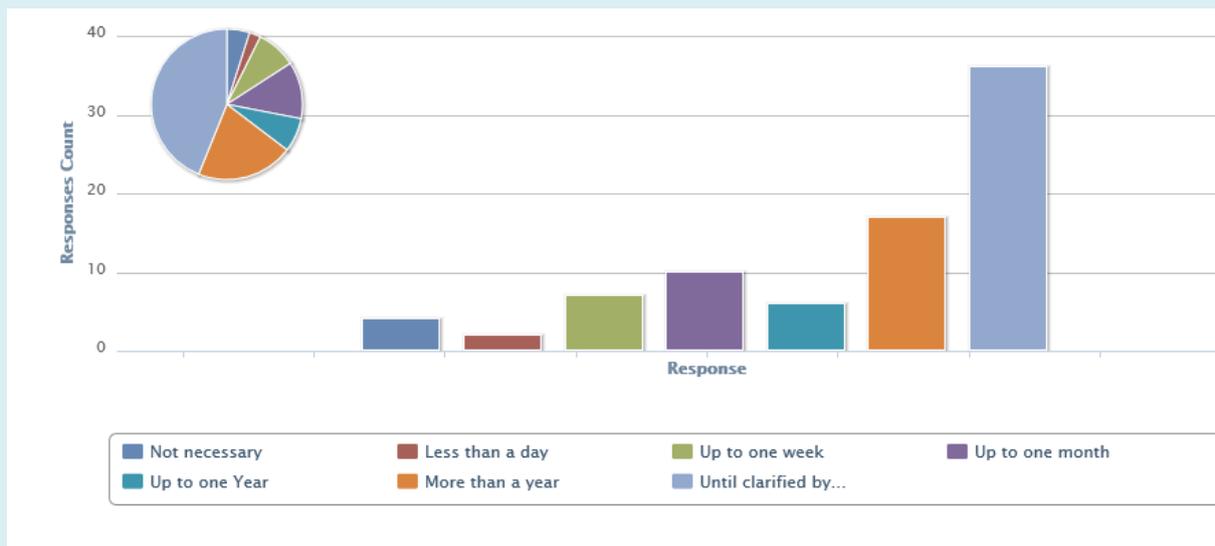
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**22. Storing of Video and Photo. Do you need to store the transferred photos or/and videos?**

At Command Center	76	93.83%
At Field Client	28	34.57%
# of people who answered question	81	

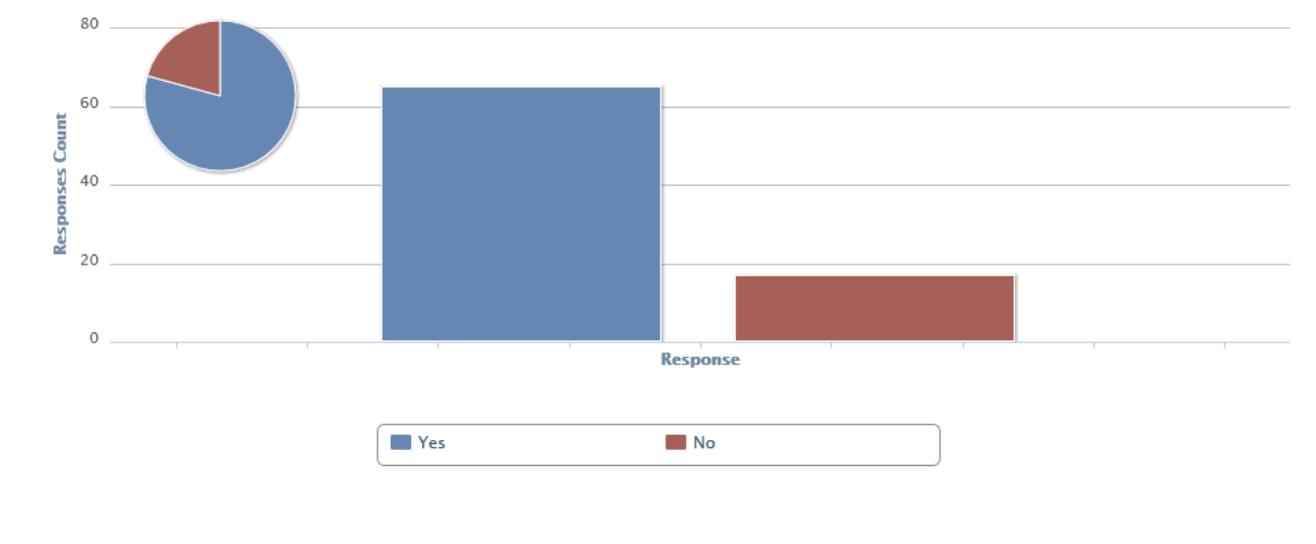
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**23. Do you need to store the transferred photos or/and videos and for how long time?**



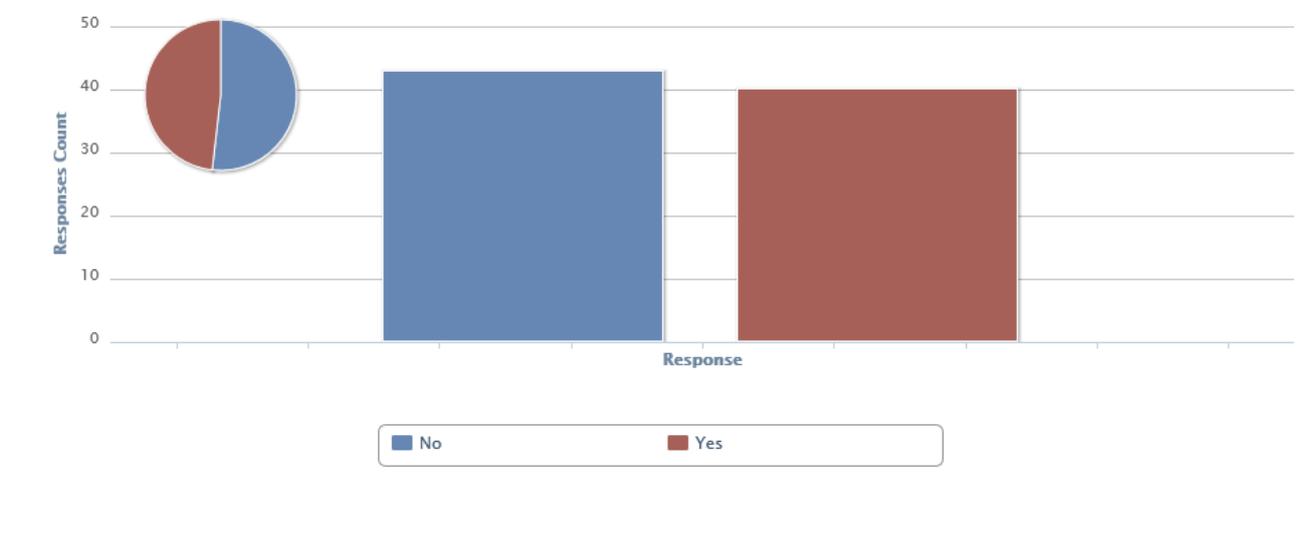
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24. Do you need a function for remote storage of photos and videos



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25. Do you need to store photos and videos on external servers (third party storage)?



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**26. Any other specifics you see necessary for the solutions for transferring photos and videos over TETRA/TEDS networks?**

**Individual Responses**

**15 17.65%**

- 1 N/A
- 2 No
- 3 No idea.
- 4 As a general note of course also other phases of the emergency cycle need transfer of photos/videos but I don't find it feasible to transfer them over tetra/teds e.g. in preparedness phase
- 5 Compatibility with LTE networks.
- 6 Maybe you can make an international drill exercise so can talk about your experience also in my country
- 7 The transmission of the data should happen with standard IP. Nnow special transformation SW is needed.
- 8 Need to consider effect on network of larger operational deployment. My feeling and experience is that Photos (Still images) are OK but video is too high bandwidth even if optimized, for TETRA/TEDS — for big deployment. For demonstration or very limited deployment might be OK, but in this case the benefits and cost/benefit is unclear. We have tested Photo image push applications on TETRA (and TEDS) extensively in large networks, and video over broadband networks (e.g. private public safety LTE) on which this is based.
- 9 It is crucially important that air interface resources are used efficiently. This means that the overall solution must be intelligent and stream video ONLY when 1 or more clients are viewing it. When no clients are viewing then only local ( in the field client) recording must occur, if required.
- 10 Tamper-proof
- 11 I do not know
- 12 Other parties
- 13 No
- 14 Sometimes the photos and videos can be confidential to the organization before published in the network, so keep the materials in a safe transferring is necessary

15 None.

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27. Do you like to receive the result of this survey, give your e-mail in the text box below?

Individual responses: 63 74.12 %

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28. Would you like to be available for further dialogue on solutions for TETRA/TEDS networks for transferring of photos/videos, give your name and e-mail in the text box below?

Individual Responses 38 44.71%

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### **Acknowledgement**

All response to this questionnaire has been very useful, and I like to thank all that has answered the questionnaire and inform that the feed-back and results of the questionnaire will be used as a guideline for further developing ANSUR Technologies (<http://www.ansur.no>) A-Sight solution for transferring photos and videos over TERTA/TEDS network, a project which is supported by EUROSTAR.

The results will also be made available to all who have answered the questionnaire, and will be posted on TIEMS web-site ([www.tiems.org](http://www.tiems.org)), as a thanks for using TIEMS network when sending out the questionnaire.