



Australian Government
Australian Radiation Protection
and Nuclear Safety Agency



The ARPANSA "Talk to a Scientist" Program: Radiation risk perception trends identified via our public engagement

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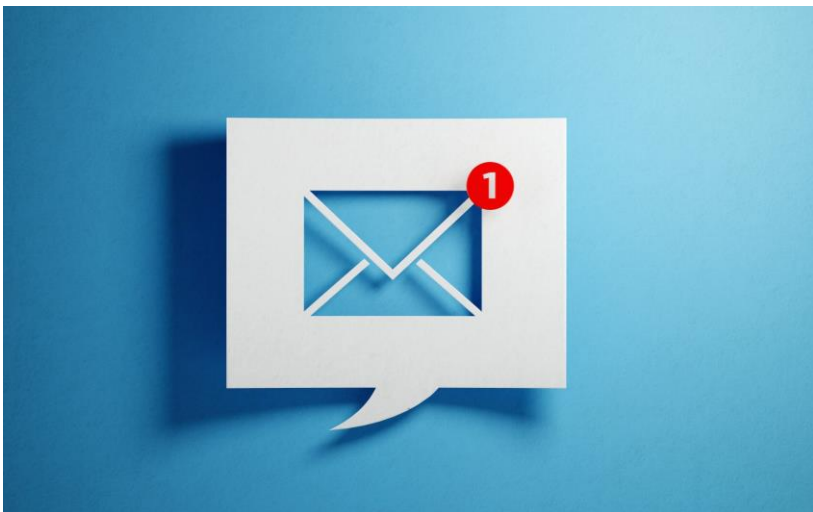
ARPANSA's Talk-to-a-Scientist Program

- The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is the Australian Government's primary authority on radiation protection and nuclear safety
- ARPANSA protects the Australian people and the environment from the harmful effects of radiation through understanding risks, best practice regulation, research, policy, services, partnerships and engaging with the community.
- The Talk to a Scientist (TTAS) Program is a key forum in which ARPANSA engages with the public, helping to deliver its mission for a safe radiation environment within Australia.
- This program provides the public with the unique opportunity to communicate directly with ARPANSA scientists on issues about radiation exposure, health, and radiation safety

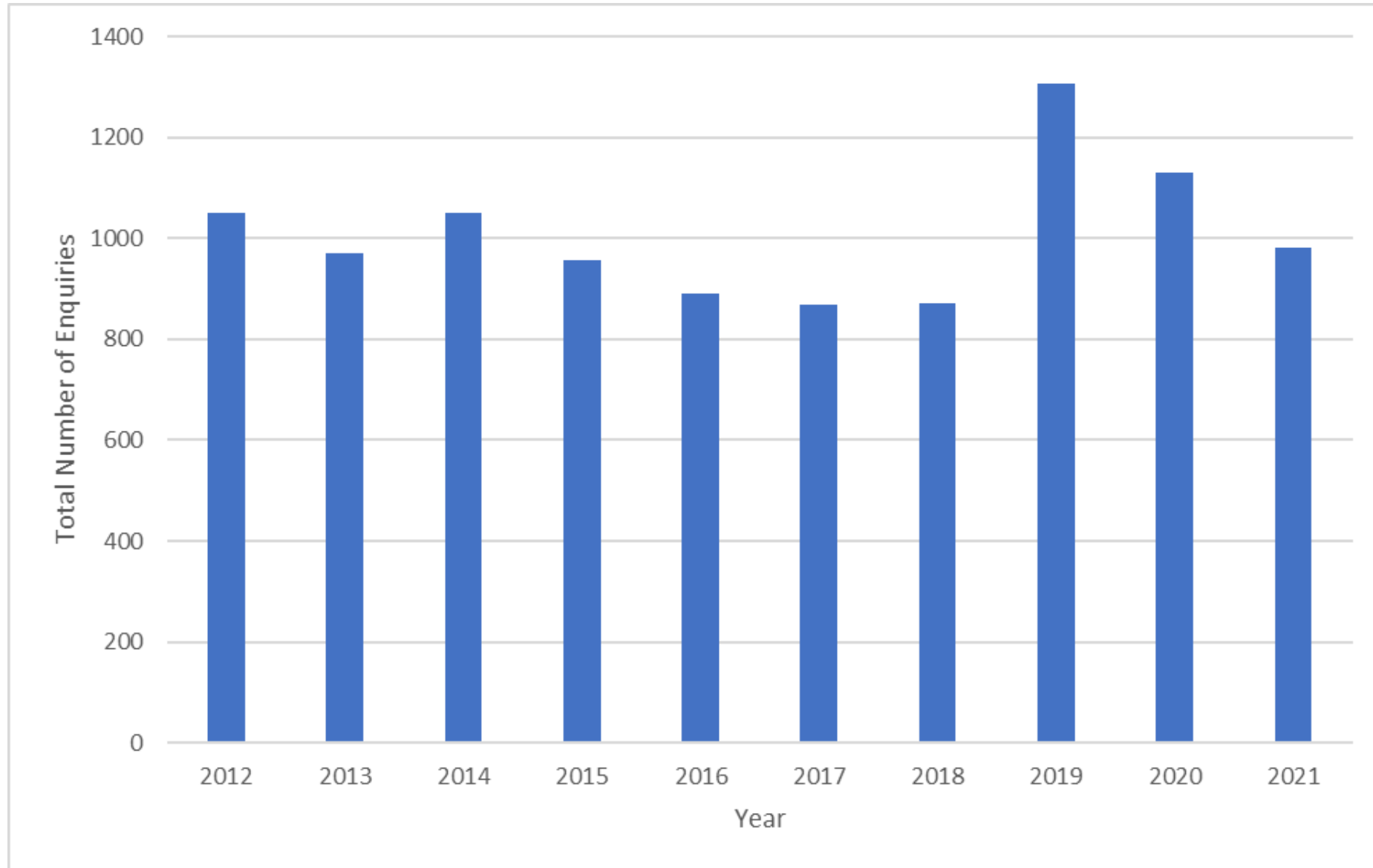


How the TTAS Program Works

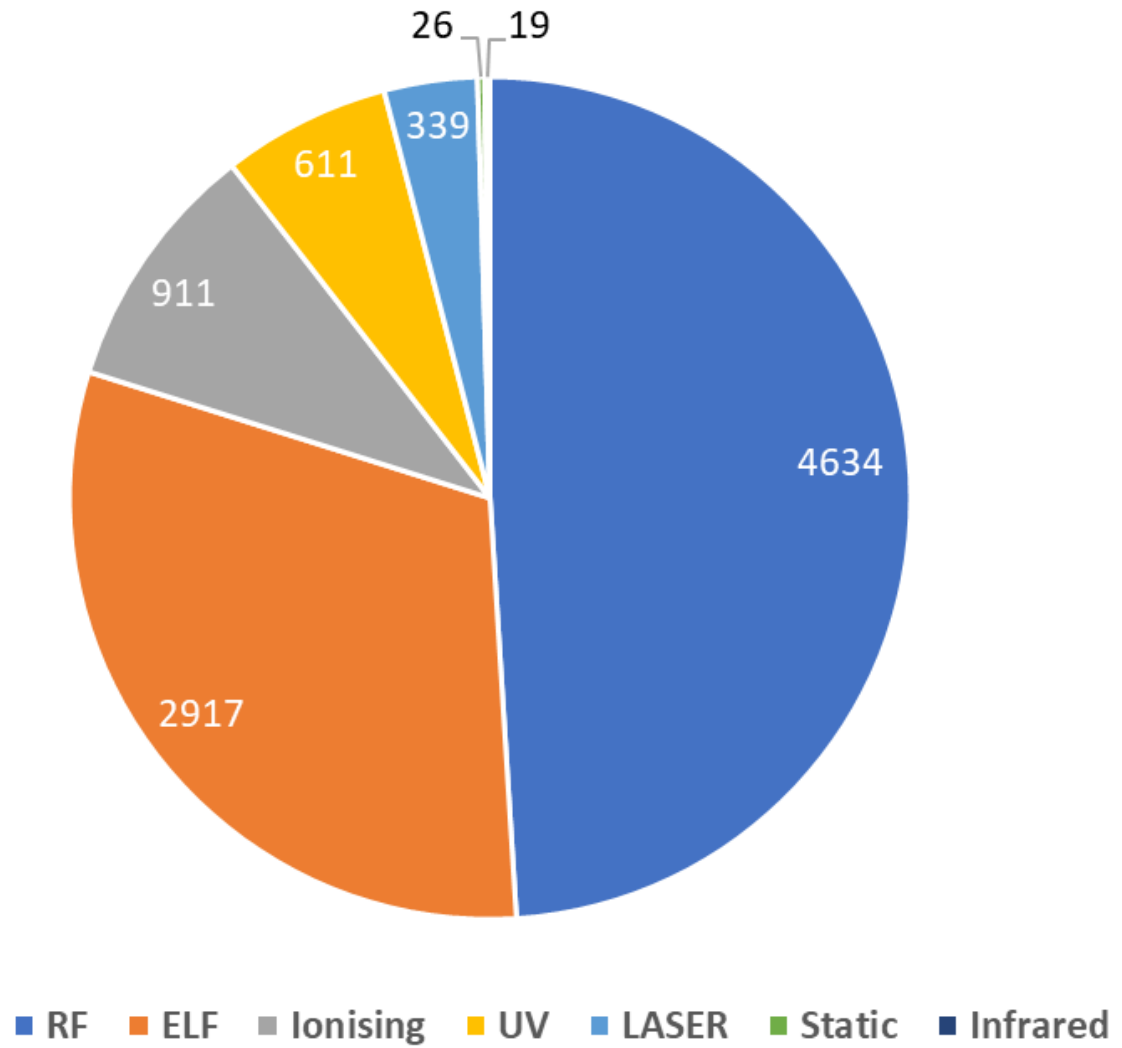
- Phone lines are open to the general public on Tuesdays and Thursday from 11:00am to 12:30pm AEST
- Email enquiries can be received at any time and we aim to respond to each within 5 business days
- All email and call enquiries are logged, and data is collected on the date of the enquiry, the type of enquiry, main topic of enquiry, the sub-topic of the enquiry and the time taken to complete the enquiry
- This data provides ARPANSA with valuable insight on community concerns and risk perception trends. Data has been prospectively collected since 2012.



TTAS Year by Year Data



The Number of TTAS Enquiries by Main Topic



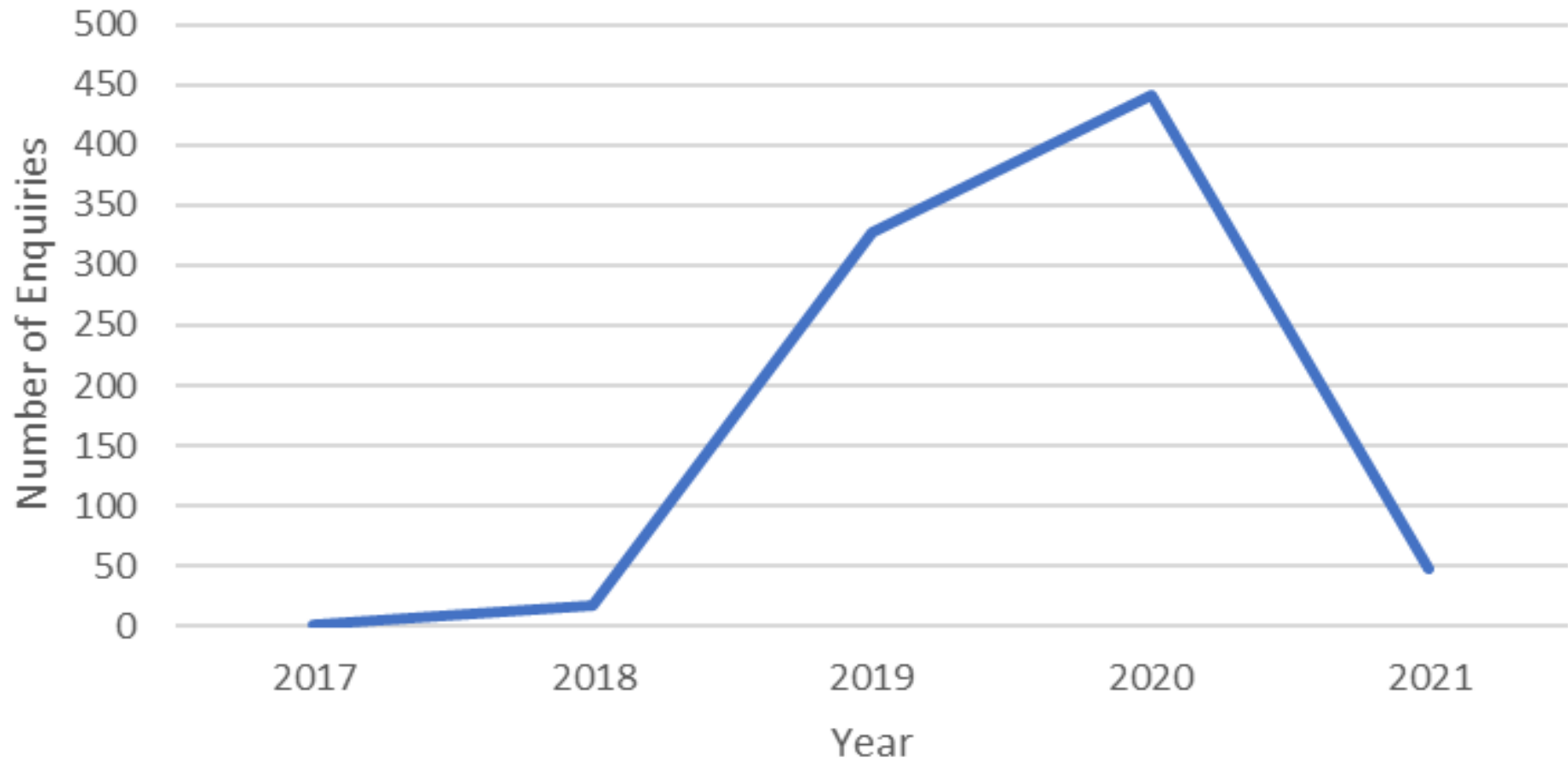
Most Common TTAS Subtopics

- 1st ELF – Electrical Supply Infrastructure (n=1906)
- 2nd RF – Communications Infrastructure (n=1656)
- 3rd RF – Office/Home Sources (n=1128)
- 4th RF – 5G (n=843)



5G

5G



Mobile Phones Vs Base Stations

- There has been 1330 Mobile phone base stations enquiries since 2012
- Yet, there has only been 163 enquiries on mobile phones despite mobile phones being used in closer proximity to the body and contributing a greater amount of RF exposure
- Convenience Vs Controversy



ELF – Electrical Supply Infrastructure

- Most common TTAS enquiry since 2012
- Majority are on powerlines (n=1213) but also substations (n=376) and transformers (n=175)
- Many enquiries are from people looking at purchasing a home near high voltage powerlines
- There is also a great deal of concern for children, in particular around the risk of childhood leukaemia
- The ARPANSA radiation meter hire service is a useful tool for providing people with ‘peace of mind’



AUKUS and Nuclear Powered Submarines

- Big announcement in September that Australia entered into an agreement with the US and UK about acquiring a fleet of nuclear submarines under a partnership termed AUKUS
- There was an immediate expectation that this would result in a significant increase number of enquiries from the general public
- However, to date we have only received 3 queries on the AUKUS agreement



Risk Perception

The Public reaction to a given situation isn't necessarily a gauge of the objective risk

Type of Radiation

Ionising

UV

ELF Magnetic Field

RF

IARC Classification

Group 1

Group 1

Group 2B

Group 2B

- Despite being greater hazards Ionising and UV have far less general public queries than RF and ELF why?
- We are all exposed to background levels of ionising radiation every day
- UV exposure is constant when outdoors during the day
- Can this distortion of Risk Perception be explained by outrage factors and can this help with our risk communication?



Outrage Factors

- Sandman's Outrage Framework
- 'Outrage Factors' are certain features of a situation which tend to cause more/less public reaction

Some common outrage factors seen amongst the common TTAS enquiries are:

Voluntariness

Controllability

Familiarity

Benefits

Effects on children/vulnerable subgroups

Trust

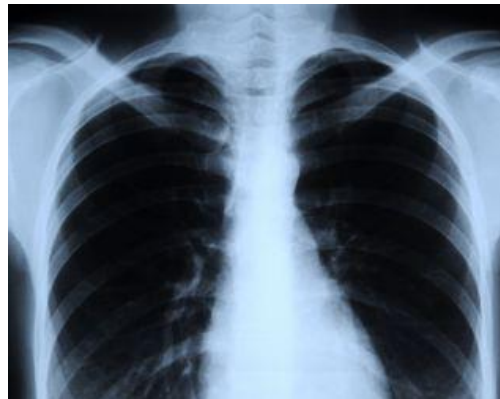
Media attention



Risk Perception

Conversely, 'outrage' tends to be less when:

- Risk are voluntarily assumed
- Risks have a 'natural' origin
- Individuals/community feel some degree of control
- There are clear offsetting benefits
- Risks & benefits are fairly distributed
- Risks associated with a trusted source



Risk Communication

- Risk perception is largely driven by emotional responses but understanding these outrage factors can help us communicate risk to the general public
- Addressing community concerns, tackling misinformation, and informing risk perception are core to promoting the health and safety of the public, workers, and the environment.
- Effective risk communication helps build ARPANSA's public profile and reputation as a trusted source of information



Summary

- The ARPANSA TTAS program deals with a large number of enquiries from the general public each year
- Most of these enquiries are on non-ionising radiation topics (ELF – Electrical supply Infrastructure, RF – Communications Infrastructure, 5G etc.)
- A possible explanation for this are ‘outrage factors’
- Certain outrage factors common to non-ionising sources of radiation can heighten risk perception and increase anxiety amongst the public
- It is important to effectively communicate the actual risk to the public to reduce anxiety and potentially negative effects such as the Nocebo effect.

Collaborators

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And the whole TTAS Team

Thank you

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