

National Register of RF Workers annual meeting
At University of Birmingham College of Medical and Dental Sciences

P=R

Public perception in the RF safety debate

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National Community Relations Manager, Arqiva (Ret'd)
20 June 2019

With some notes added
afterwards in boxes like this

Peter examines why the public worry more about the safety of mobile phone masts than they do about mobile phones, or large public broadcasting transmitters, or the myriad of other sources of natural and man-made EMFs in their environment.

- **What can our industry do to reassure the public and mitigate their anxiety?**
- **Why is this important?**

Peter is a chartered surveyor with twenty eight years' experience in deploying wireless infrastructure in the UK. He joined Orange (then called Microtel) in 1991 and was its National Town and Country Planning Manager during a period when Orange went from a startup to best UK mobile network in four years.

Whilst at Orange he engaged with hundreds of local authorities across the UK, explaining the advantages and technical constraints of mobile network development. He moved on to become Business Development Manager at Terracom, a telecoms site acquisition agency that worked simultaneously for all five of the UK's mobile network operator. Terracom grew from two to over seventy people in five years and was then acquired by Crown Castle which eventually amalgamated into Arqiva.

Peter spent the last nineteen years at Arqiva, where he was responsible for developing and delivering Arqiva's processes for public engagement in the deployment of mobile and public broadcast infrastructure. He was involved in the development and implementation of the codes of best practice for mobile network development and has engaged extensively with the public and their elected representatives at all levels across the whole of the UK. Arqiva has upward of 8,000 operational transmitter sites and it implements thousands of radio infrastructure projects on new and existing sites every year. Peter retired from Arqiva in January.

Starting point:

The consensus of independent expert advice over several decades:

Public broadcast transmitters and mobile base stations
(compliant with guidelines) are almost certainly
not harmful to public health

However:

Perception = Reality

EE tell 'really frightened' Bath mum she has 'misunderstood' 5G risks

The Bath resident fears people are being used as 'guinea pigs'



[Link to article](#)

[Extracts from article]

"Samantha Davies worries the new 5G mobile network could be a risk to people's health, the health of animals and the environment. She added residents are being treated like 'guinea pigs' and that people will not realise there are problems with 5G until it is too late".

Samantha read a number of articles about 5G after hearing about it from her husband.

She said that she isn't normally politically motivated, but has since joined a number of people online who are terrified about the risks of 5G.

"I've never felt so strongly about anything," she said.

"I think it's going to be really dangerous.

"I have two young children and 5G gives me fears about the environment and health.

"I've joined a couple of groups on Facebook as a campaigner.

"We're just not being told anything.

"No one really knows anything about it. And by the time anyone hears about it, it's going to be too late.

"As a Bath resident, I've lived here all my life but I said to my husband 'I want to move away'.



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Meghan Markle and Prince Harry's touching tribute to Princess...



Prince Harry wears significant piece of jewellery for baby...



Leeds vs Derby LIVE: Championship play-off semi-final, team news...

5G could cause CANCER and HEART DISEASE - shock claim emerges

THE introduction of 5G could devastate society by increasing cancer risk and heart disease, according to one conspiracy theorist.

Scientists and Doctors Warn of Potential Serious Health Impacts of Fifth Generation 5G Wireless Technology

Rainer Nyberg • 2 weeks ago • [English](#)

We the undersigned, more than 180 scientists and doctors from 36 countries, recommend a moratorium on the roll-out of the fifth generation, 5G, for telecommunication until potential hazards for human health and the environment have been fully investigated by scientists independent from industry. 5G will substantially increase exposure to radiofrequency electromagnetic fields (RF-EMF) on top of the 2G, 3G, 4G, Wi-Fi, etc. for telecommunications already in place. RF-EMF has been proven to be harmful for humans and the environment.

<http://www.5gappeal.eu/scientists-and-doctors-warn-of-potential-serious-health-effects-of-5g/>

Not all these people could be described as scientists or doctors. But Lennart Hardell's research was instrumental in the IARC 'possible carcinogen' classification

Signatories include: Gerd Oberfeld (of the Salzburg Microwatt), **Lennart Hardell**, Olle Johansson, David Gee, Andrew Goldsworthy, Erica Mallery Blythe (Electrosensitivity UK), Alasdair Phillips ("Professional Engineer, Powerwatch"), David Carpenter, Lloyd Morgan, Cindy Sage (Bioinitiative Report).



The National Register of RF Workers



The concerns over electromagnetic fields (EMFs) and specifically radiofrequency (RF) radiation continue to grow and have been labelled by the International Agency for Research into Cancer (IARC) as “possibly carcinogenic to humans”.

Hazard v Outrage - Peter Sandman

Strongly recommended: <https://www.psandman.com/>



- ▶ “If you take a long list of hazards and rank them in order of expected annual mortality (how many people they will kill in a good year) and you take the same list of hazards and you rank order them according to how upsetting they are to people, the correlation between the two rank orders is approximately 0.2, representing a percentage of variance of 4%.
- ▶ “In other words the risks that kill people and the risks that upset people are completely different”.
 - “If you know a thing is dangerous it tells you almost nothing about how upsetting it is”.
 - “If you know a thing is upsetting it tells you almost nothing about how dangerous it is”.

Risk perception



If this rate applied to riggers it would result in about 4.5 serious injuries per rigger per annum.



Horses: **One serious injury for every 350 hours of contact**

(The horse
seems to get it)



Factors affecting perception of risk

LOW

- Familiar
- Personal benefit
- Voluntary
- Control
- Fair
- Trustworthy source
- Responsive process
- Respectful

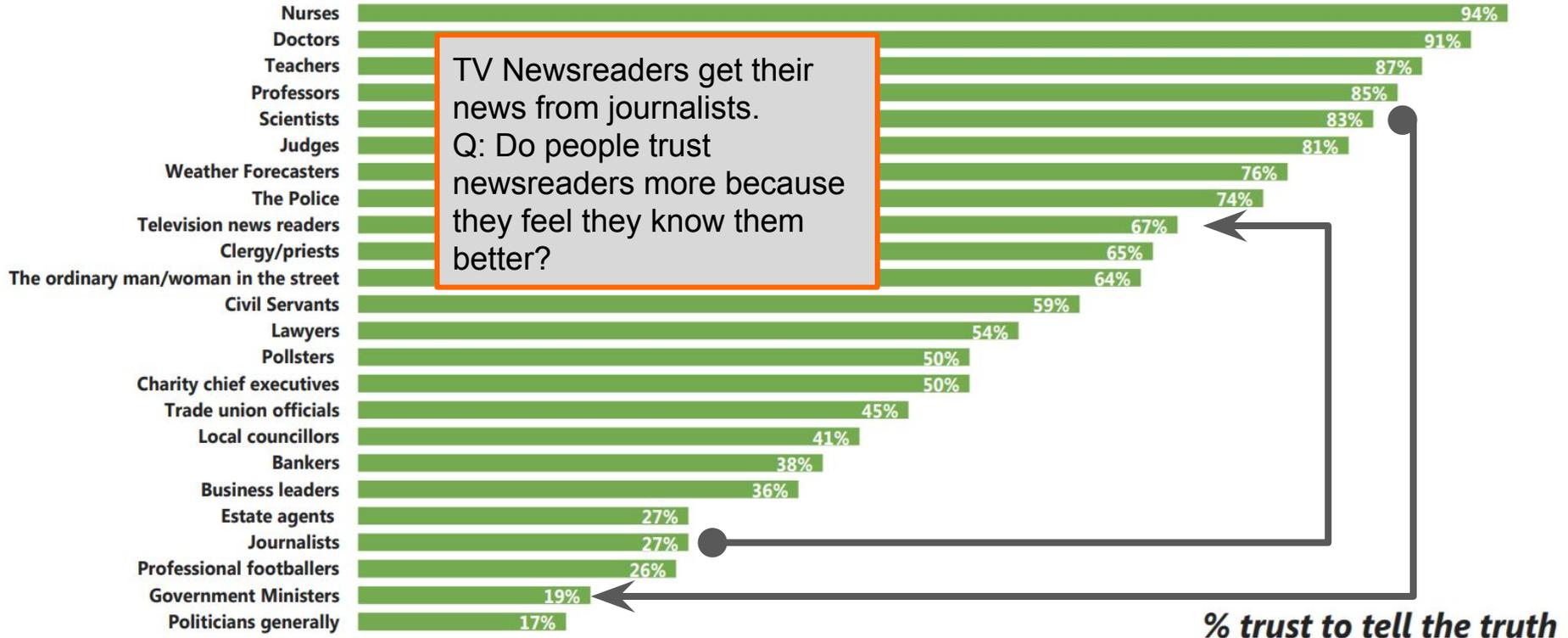
HIGH

- Unfamiliar
- No personal benefit
- Coerced
- No control
- Unfair
- Untrustworthy source
- Unresponsive process
- Disrespectful

Our task is to get base stations/masts from the right column, where they now tend to reside, as far as possible into the left column.

Veracity Index 2017 – all professions overview

"Now I will read you a list of different types of people. For each would you tell me if you generally trust them to tell the truth, or not?"



Reasons for objection to base stations

- Location It's near me
- Appearance It's hideous
- Safety It's going to kill me

But No. 1 is:

“We were not even consulted”

Outrage and perception of danger: (Sandman again)

1. If people are upset, they will perceive a thing as more dangerous
2. If people perceive a thing as dangerous, they will become upset

But 1 is much stronger than 2

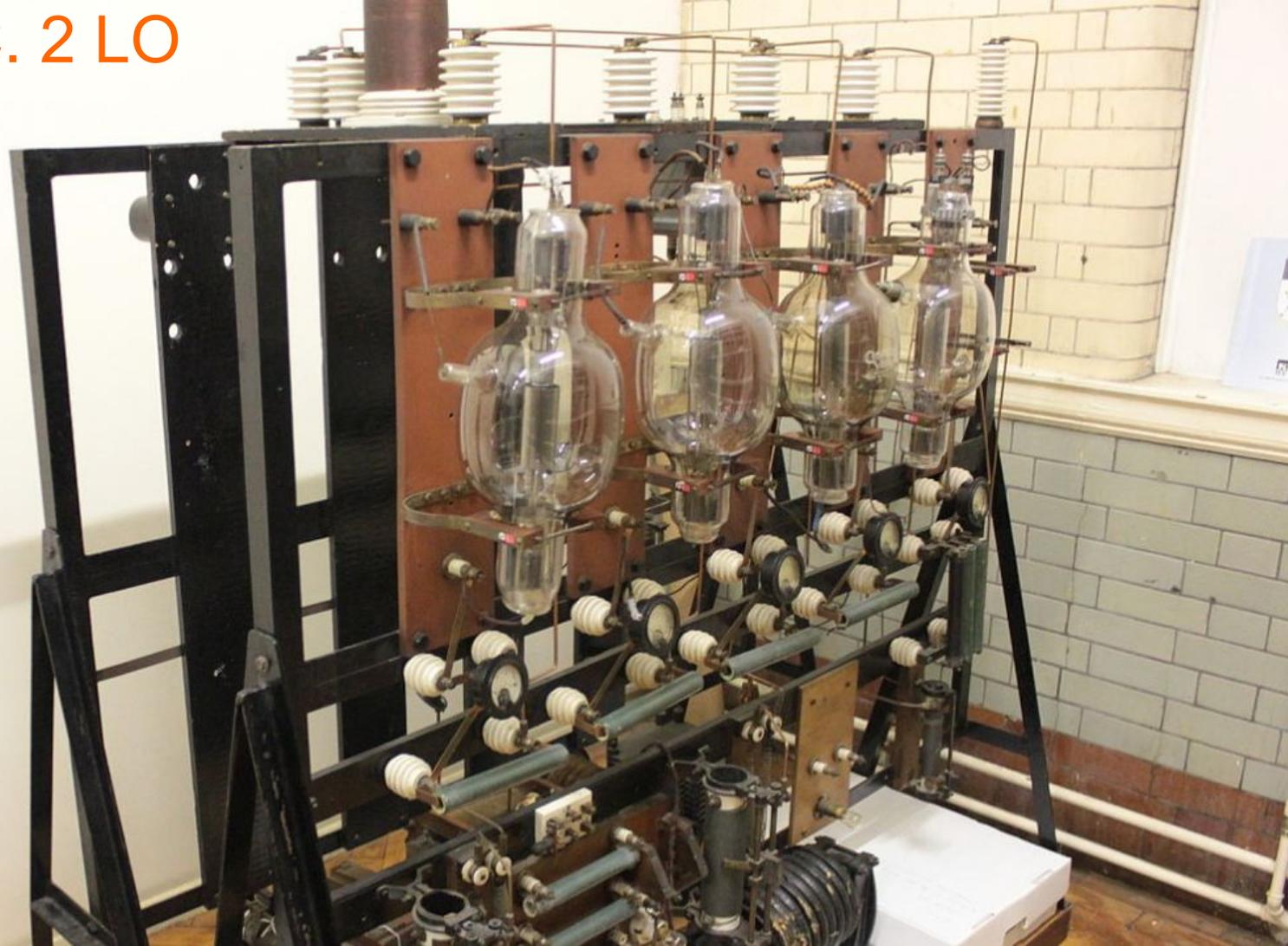
- Once people are upset, they become resistant to reason
- Simply “explaining the data” is not going to work
 - We are **all** immune to information we don't want to learn

Some history:

1922: BBC. 2 LO

100 Watts

857 kHz



1956 - Crystal Palace
Millions of watts ERP



First UK Mobile call. Ernie Wise - 1985



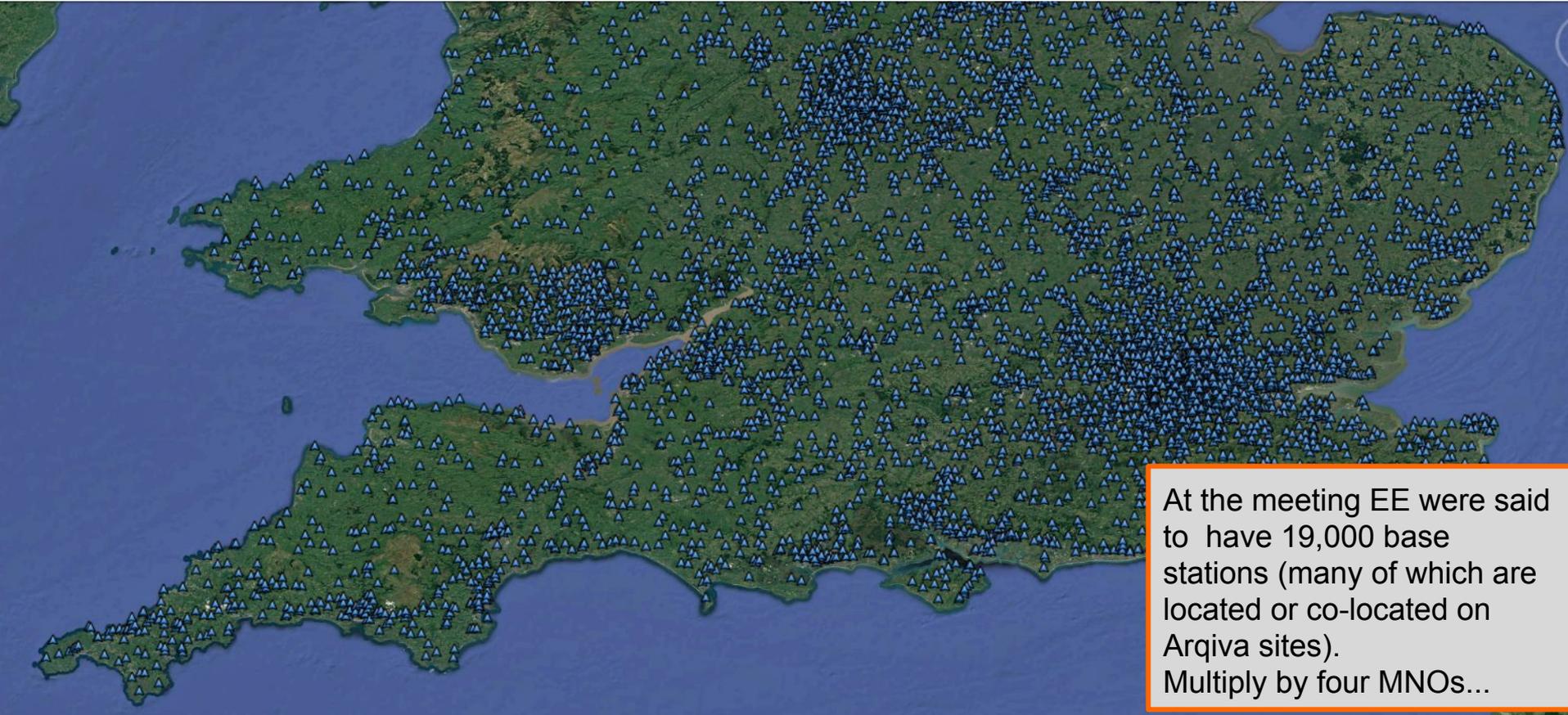
2018 Q4 - Ofcom UK mobile subscriptions (Millions):

	Conns during period	Total subs at end of period
2018 Q1	6.72	84.09
2018 Q2	6.66	83.76
2018 Q3	7.76	83.99
2018 Q4	7.40	84.00

How many masts/base stations?

- Many tens of thousands

(Some of Arqiva's
8,000+)



At the meeting EE were said to have 19,000 base stations (many of which are located or co-located on Arqiva sites).
Multiply by four MNOs...

Early (and sometimes repeated) mistakes:

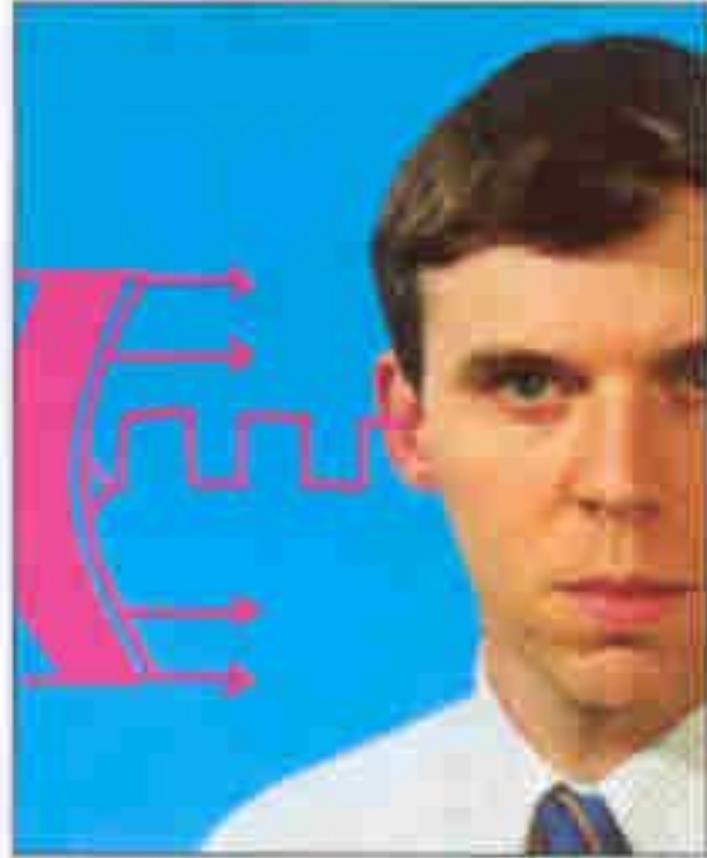


**“We will be rolling out our network in your area”
 (“We have a license obligation”)**

Old NRPB leaflet:

“In itself...”

I find this image deeply alarming. Something awful is clearly being done to the poor man. I think it was intended to reassure.



Some people can hear the pulses from radar. In itself this is not considered to be harmful.

Stewart Report (April 2000):

“We recommend, in relation to macrocell base stations sited within school grounds, that **the beam of greatest intensity** should not fall on any part of the school grounds or buildings without agreement from the school and parents. Similar considerations should apply to macrocell base stations sited near to school grounds”.

Note that no level was specified.

- And “The beam of greatest intensity” is an alarming expression, implying as it does, ‘great intensity’!

Stewart ‘Clarification of issues’ (June 2000)

Government question: “Why was the Expert Group only concerned with “beams of greatest intensity” falling on any part of school grounds rather than other areas which children occupy?”

A: “Exposure to members of the public from macrocell base stations is very much less than current guidelines. **In giving special attention to schools, the Expert Group was responding very largely to public concern** rather than any proven health hazard.

“Since there are no scientific grounds for setting guidelines below the levels set by the International Commission for Non-Ionizing Radiation Protection (ICNIRP) for the public, the Expert Group avoided setting exposure limits for school buildings and grounds below these limits.

For the same reason it did not wish to recommend that there should be a particular minimum distance between the base station and the school”.

The damage was done and in terms of public perception has lasted until the present day.

A truly counterproductive attempt to address public concern.

Did anyone pay attention to the ‘clarification’? NO!

This structure required no planning permission and there was no prior engagement with these neighbours; it just arrived one day. That is a child's cot in the foreground.

The intelligent and well-educated owners of this house became very concerned about RF and the safety of their family.

This one, and a few similar, were instrumental in getting Permitted Development rights completely removed in Northern Ireland.

The tower was eventually relocated.





Again, this was built as a Permitted Development with no prior engagement. Installed by crane on a Sunday during a family birthday barbecue. It was blockaded by neighbours and never completed.

Local perception produced this reality

This tower was felled by local people who were worried about a perceived cancer cluster. They were particularly concerned about the dishes.

Queen's University did a careful study and concluded there was no cancer cluster.

Cranlome
Queen's University
Belfast - Northern
Ireland Cancer
Registry

Code of Best Practice:

- ▶ <http://mobileuk.org/pdf/cobp-mobile-network-development.pdf>
- ▶ 2002 - Revised Autumn 2016:

67
Pages!!!

Code of Best Practice on Mobile Network Development in England

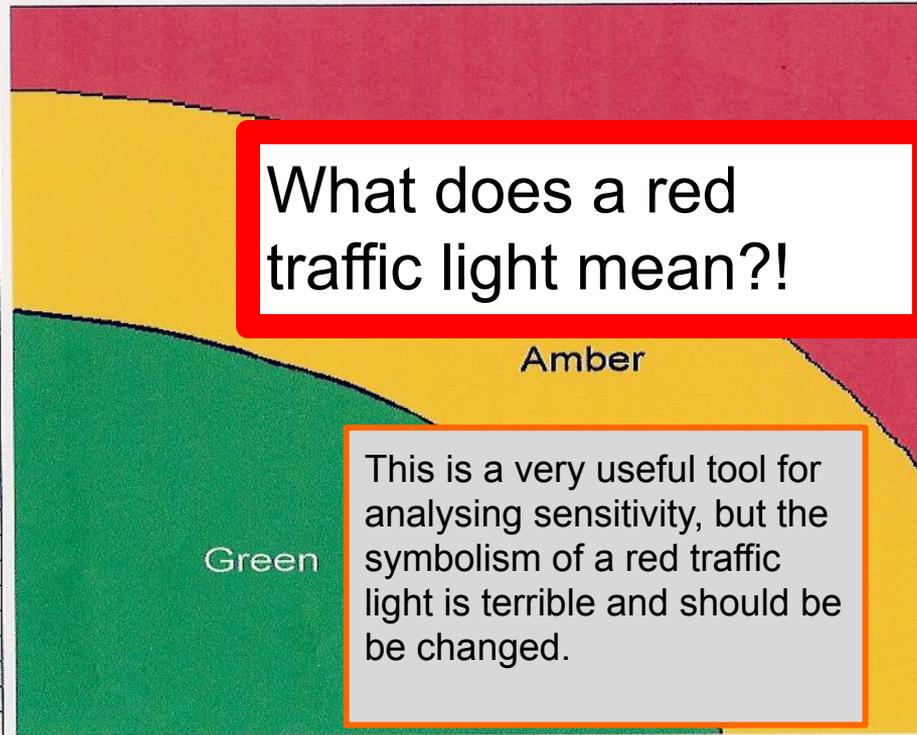
The Code was instrumental in starting the process of systematic stakeholder engagement. It was very important but has its faults, e.g. being too long for ANYONE to read it.

This Code has been developed by a Working Group consisting of representatives of: Arqiva; the Department for Communities and Local Government; the Department for Culture Media and Sport; the Department for Environment, Food and Rural Affairs; Historic England; the Local Government Association; Mobile UK (representing the Mobile Network Operators); Landscapes for Life; National Parks England; and the Planning Officers Society.

TRAFFIC LIGHT RATING MODEL FOR PUBLIC CONSULTATION

Media		
Social/Political	Council policy on telecommunications/views of Local Planning Authority; Level of influence of local and key stakeholders and Non Government organisations; Involvement of MIP, LPA own land and Property	0-10
	Views and attitudes of Local communities	0-15
	Previous residents activity and likely community views	
	Likely media interest, regional/local media coverage, previous media interest, other sites that have raised the profile of the issue.	0-5

High	30
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LOW	0
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
High																													
Planning and Environmental Issues																													

The Traffic Light Model must be used to give an overall Rating for each proposed site. The Model combines elements of subjectivity and objectivity and is intended as a guide to the degree of consultation necessary. Once the Rating has been determined then the Consultation Strategy is used to provide the options available in respect of the level of public consultation. It is important to seek LPA input into the process. The rating for each site is to be reviewed at least once – in particular after pre-application consultation.

Sensitive Land Use	Site in relation to residential property, homes and schools and other sensitive land uses such as nurseries, playgroups, playgrounds and hospitals.	0-15
Siting and Appearance	Siting – existence of topographical features and natural vegetation, flora and fauna, impact on skyline or horizon, townscape clutter, site in relation to existing masts, structures or buildings (including historical or traditional character), views of recognised importance. Appearance - height in relation to surrounding land; appearance of the installation; materials, colouration, dimensions (other than height), overall shape; solid or open framework, transmission solutions (i.e. impact of dish). Type of site - new site, upgrade, swap out, mast share	0-10
Planning	Development Plan Policies including Green Belt designation, Precedents/Site History, Impact on sites of special land use designation such as National Park, AONB, Conservation Area, SSSI, Listed Buildings.	0-5





‘Electrosensitivity’

(Or ‘ideopathic environmental intolerance’)

- The symptoms are real and sometimes very distressing and disabling
- Sufferers are unshakeable in their belief that their symptoms are caused by EMFs
- WHO and PHE consider there is no convincing evidence to suggest that this is the case
- “Accusing people of being irrational always backfires, even if it might be true”
- So what to do?

I really don't have an answer to this one.
It is worth visiting the links on the next slide for a flavour of this debate.

[Link to Guardian](#)

[Link to Mallery-Blythe](#)



Prof Olle Johansson
Karolinska Institute



Dr Erica Mallery Blythe
Electrosensitivity UK



Brian Stein
Former CEO Samworth Brothers, Nottinghamshire



Quote from the Guardian piece:

After (self-assessed) exposure to WiFi:

“I felt rotten for the next two days.

It was at that point I spoke to a GP about it and he said:

‘You are probably electrosensitive to pulsed microwave radiation’”

Terminology

- It is important to be clear, honest and straightforward
- But please give a thought to your terminology:
- ‘Engage’, ‘communicate’, ‘inform’, ‘explain’ ‘reassure’
invite comments and questions...
- **But don't say ‘consult’ unless you are actually doing that***

* As in “We are **consulting** you about an irrevocable decision that we have made to site this mast of this design at this location. We have done all the network planning work, drawings have been prepared, we have expended a lot of time and money and we have no intention of reviewing our decision”.

- This tends to annoy.

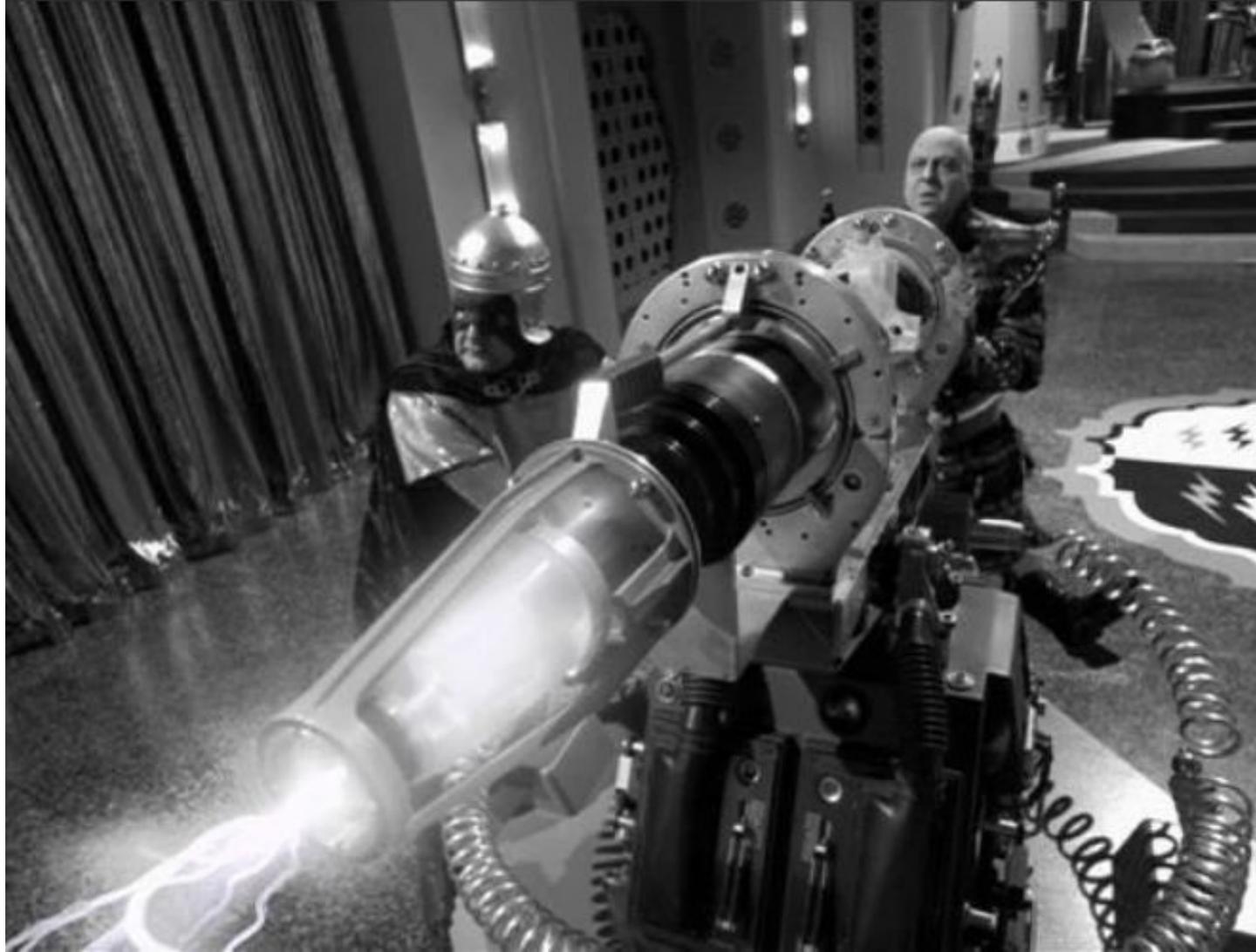
“Stealth technology”. What we think:



“Stealth technology”. What everyone else thinks:



Microwave



Future Challenges

- '5G' (like all previous generations) is likely to be perceived as completely new, un-assessed and potentially unsafe technology
- Large numbers of new installations in a short timeframe
 - Probably closer to people
- Larger and more numerous antennas (“Ikea wardrobes”)
- Relaxation of planning controls reduces the perception of accountability & control
- Anxiety generated by Smart Metering
- Possible future use of higher frequencies may generate unjustified anxieties

Take care about seeking to reassure people by saying you are not planning to use “millimetre wave” technologies, because A. You may create the impression that there might be something suspect about them and B. You probably will be using them sooner or later.

Actions and solutions

- Ensure that everyone working on network deployment is aware of these issues
- Empathise - “Do as you would be done by”. “How would you feel?”
- Effective, early and appropriate community engagement (**not necessarily “consultation”**)
- Effective and prompt responses to stakeholder complaints & enquiries
- Revise and simplify the Code of Practice - Ditch the Traffic Light Rating symbolism
- Do not expect to be believed (“Even the good guys lie”)
- Do expect to be accountable
- Acknowledge wrongdoing
- Give away the credit
- Pay close attention to aesthetic design and symmetry
- Pay close attention to sensitive siting (within technical constraints)
- Sensitive use of terminology. Explain the technology and its constraints in simple non-technical terms
- Provide measurement surveys when required
- **And above all:**

Engage

Don't

Enrage

And remember:

You can always trust
a Chartered Surveyor.



Thank you for listening

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