Workshop on Electromagnetic Fields and Health Effects:
From Science to Policy and Public Awareness
Conciliating Scientific Findings and Uncertainties in Policy Making
27-28 March 2014, Cotsen Hall, Athens, Greece

MOBILE PHONES:

CONSUMER INFORMATION ON SAR

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Mobile Manufacturers Forum

Outline

- About the MMF
- SAR Reporting Phase I + II
- Why compliant mobiles are equally safe

About the MMF

- International association of radio equipment manufacturers
  - Representing the majority of global handset sales
  - The providers of the majority of global network infrastructure
- Association's focus:
  - health and safety
  - accessibility
  - anti-counterfeit
- Key areas of activity:
  - research and standards support
  - regulatory harmonisation
  - public communications

MMF Members

- Alcatel Mobile Phones
- Apple
- Cisco
- Ericsson
- Intel
- LG
- Microsoft
- Motorola Mobility
- Motorola Solutions
- Nokia
- Samsung
- Sony

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SAR Reporting Phase I:

2001- 2010

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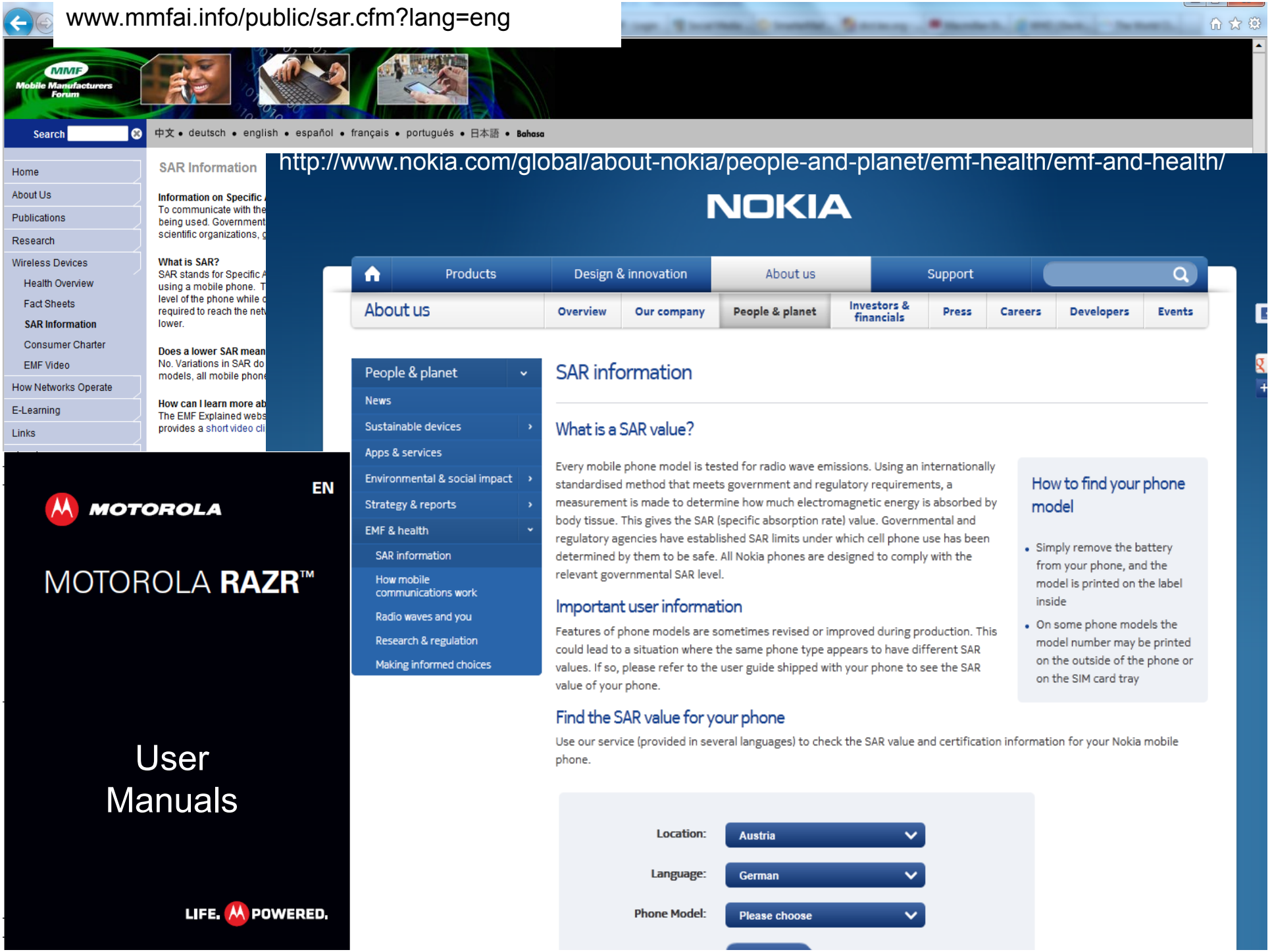
www.mmfai.info/public/sar.cfm?lang=eng



Experience since 2001

- Little real interest from consumers based on
  - web-site stats,
  - enquiries to help-lines or
  - evident at retail level.

SAR Reporting Phase II:

ongoing

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SAR Reporting Phase II: 3 Key Elements

1. The development of SARTick website to provide comprehensive information source on SAR issues.

2. The inclusion of one additional information note in the front part of the user manual.

3. Modification of the existing SAR information text in the user manual.

Key Element 1: SAR-Tick Website

- comprehensive info source on SAR issues
- The MMF is working with consumer groups in a number of countries to help educate consumers on SAR issues and to promote awareness of SARTick.com website.

(www.sartick.com as well as www.sar-tick.com will work)

Key Element 2:
Additional Front Section Info

www.sar-tick.com

This product meets applicable national SAR limits of <2.0W/kg or 1.6W/kg>. The specific maximum SAR values can be found in the xxxx section of this user guide.

When carrying the product or using it while worn on your body, either use an approved accessory such as a holster or otherwise maintain a distance of xx cm from the body to ensure compliance with RF exposure requirements. Note that the product may be transmitting even if you are not making a phone call.

Key Element 3:
Modified SAR Information Text

THIS DEVICE MEETS INTERNATIONAL GUIDELINES FOR EXPOSURE TO RADIO WAVES

Your mobile device is a radio transmitter and receiver. It is designed not to exceed the limits for exposure to radio waves (radio frequency electromagnetic fields) recommended by international guidelines. The guidelines were developed by an independent scientific organization (ICNIRP) and include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

The radio wave exposure guidelines use a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit for mobile devices is 2 W/kg.
Tests for SAR are conducted using standard operating positions with the device transmitting at its highest certified power level in all tested frequency bands. The highest SAR values under the ICNIRP guidelines for this device model are:

Maximum SAR for this model and conditions under which it was recorded.		
Head SAR	UMTS 1900 + Wi-Fi + Bluetooth	x.xx
Body-worn SAR	GSM 1800 + Wi-Fi + Bluetooth	x.xx

During use, the actual SAR values for this device are usually well below the values stated above. This is because, for purposes of system efficiency and to minimize interference on the network, the operating power of your mobile device is automatically decreased when full power is not needed for the call. The lower the power output of the device, the lower its SAR value.

Body-worn SAR testing has been carried out <using an approved accessory or> at a separation distance of x.x cm. To meet RF exposure guidelines during body-worn operation, the device should be <in the approved accessory or> positioned at least this distance away from the body. If you are not using <an approved accessory> ensure that whatever product is used is free of any metal and that it positions the phone the indicated distance away from the body.

Organizations such as the World Health Organization and the US Food and Drug Administration have stated that if people are concerned and want to reduce their exposure they could use a hands-free device or reduce the amount of time spent on the phone.

For more information…….

SAR Summary Table

	Maximum SAR for this model and conditions under which it was recorded:		
(1)	**Head SAR**	UMTS 1900 + Wi-Fi + Bluetooth	x.xx Watts/kg
(2)	**Body-worn SAR**	UMTS 1800 + Wi-Fi + Bluetooth	x.xx Watts/kg

(1) Measured according to IEC 62209-1, no separation distance applies

(2) Measured according to IEC 62209-2, separation distance can apply

Reference to World Health Organisation

- The text also includes WHO and FDA information on reducing exposure should a user wish to do so (quote):

> "Organizations such as the World Health Organization and the US Food and Drug Administration have stated that if people are concerned and want to reduce their exposure they could use a hands-free device or reduce the amount of time spent on the phone."

Summary “SAR Reporting Phase II”

- Expands a decade-long commitment to SAR reporting
- “SAR Reporting Phase II” consists of :
  - The development of SARTick website for consumers
  - An additional SAR section and pictogram at the up front in user manuals
  - Existing SAR information text modified
- These changes and additions provide:
  - Additional information for consumers in user manuals
  - Additional online information resources for consumers
  - A solution for politically driven SAR discussions
- Licencing of SAR-Tick pictogram and texts possible

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SAR ?

Specific **A**bsorption **R**ate

Measured in:

Watts / kg

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NOKIA
Creative Studio
Nokia City Lens


LG
10:10AM
Google
Browser
Email
Market
Camera
Call
Contacts
Messaging
Apps

Head+Trunk SAR

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ICNIRP SAR Limit: Mobile Phones

Exposure Characteristic	Whole Body averaged Specific Absorption Rate	Local SAR averaged over 10 g of tissue	
		Head & Trunk	Limbs (arms, legs)
Workers' exposure	0.4 W/kg	10 W/kg	20 W/kg
General Public exposure	0.08 W/kg	2 W/kg	4 W/kg

Guidelines for Limiting Exposure to Time-varying Electric, Magnetic and Electromagnetic Fields (up to 300 GHz)." Health Physics, April 1998, vol.74, number 4, pp. 494-522

SAR Limit and Established Adverse Health Effects

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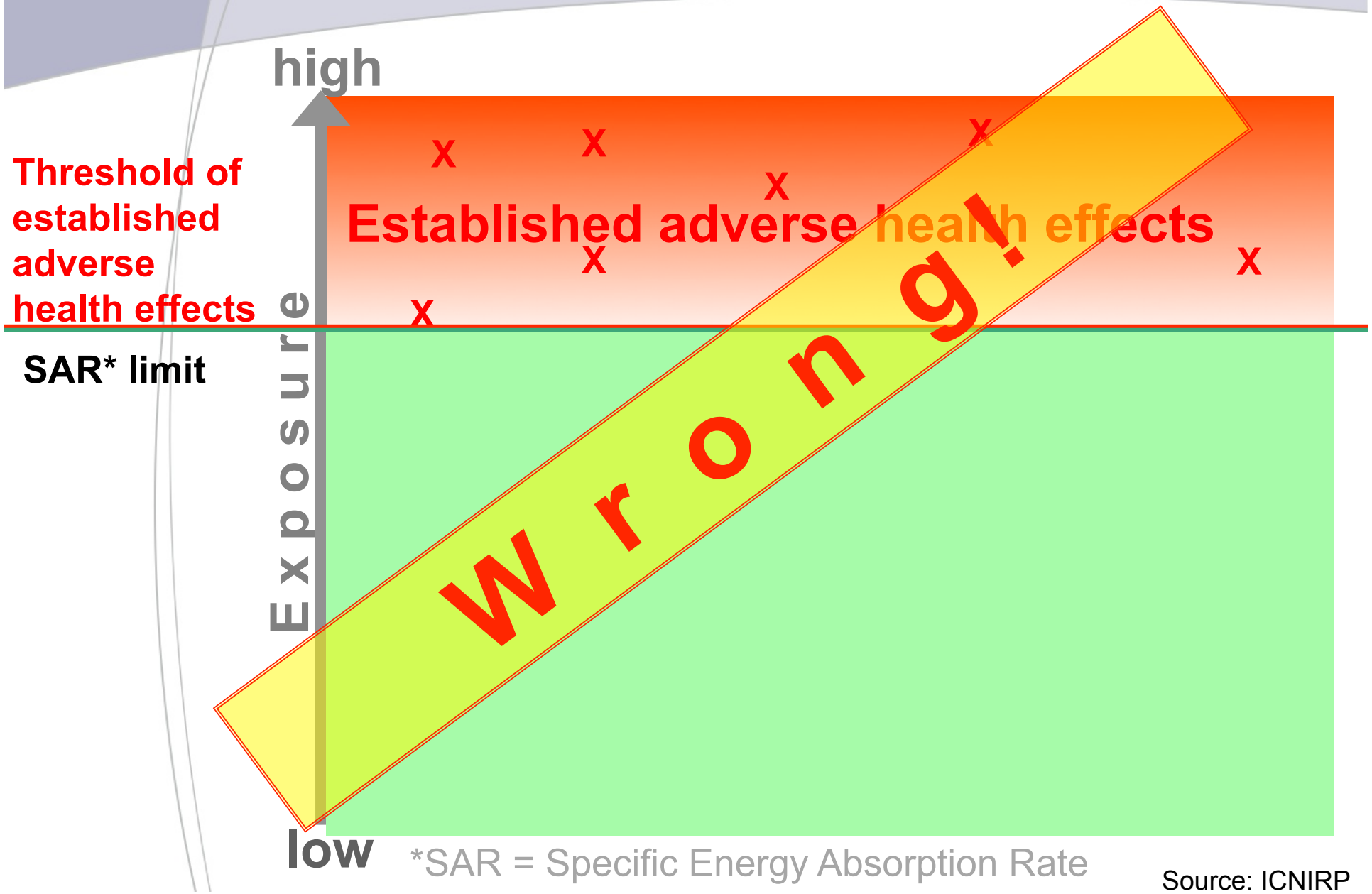
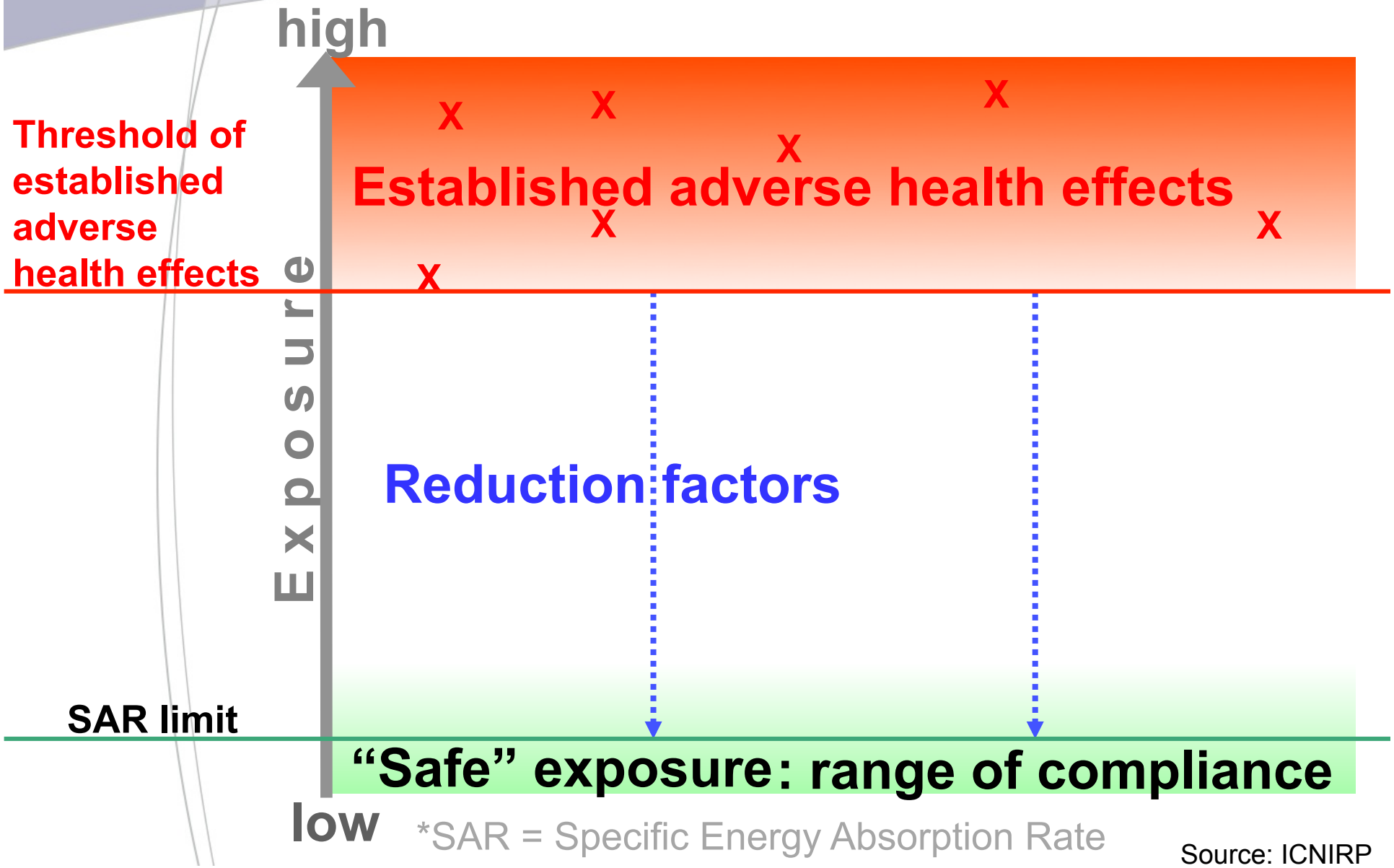
Misinterpretation of SAR* limit (2 W/kg)



*SAR = Specific Energy Absorption Rate

Source: ICNIRP

SAR* limit (2 W/kg) correctly explained



*SAR = Specific Energy Absorption Rate

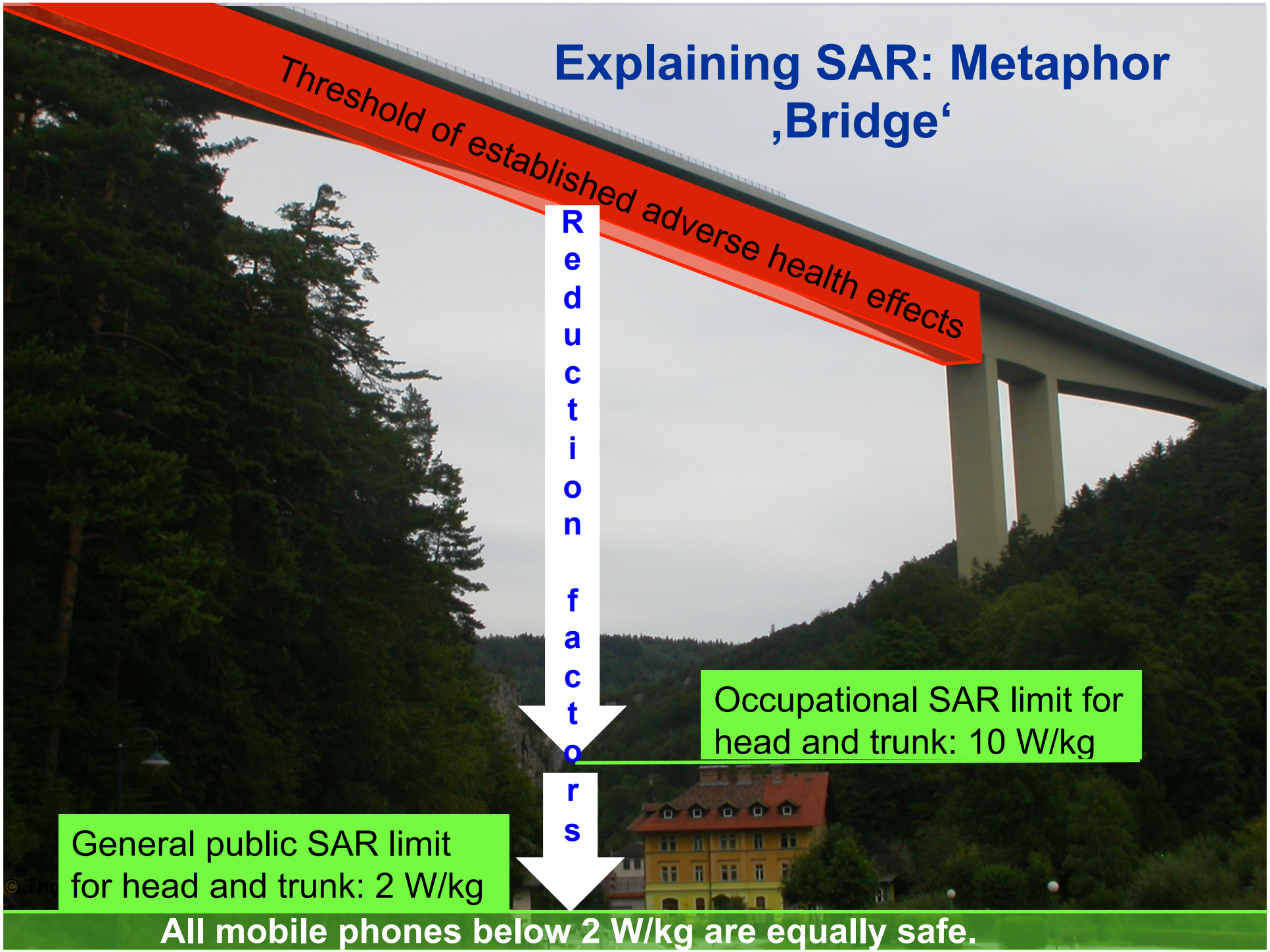
Source: ICNIRP

Explaining SAR: Metaphor ‚Bridge‘

Clearance = threshold of established adverse health effects

Maximum permissible height = SAR limit

…but to show
the right proportions you will need …


Explaining SAR: Metaphor ‚Bridge‘
Threshold of established adverse health effects
Reduction factors
Occupational SAR limit for head and trunk: 10 W/kg
General public SAR limit for head and trunk: 2 W/kg
All mobile phones below 2 W/kg are equally safe.

Mobile Phones:
SAR Compliance Testing

- 2 measurement standards in place:
  - IEC 62209-1 (head, no separation distance)
  - IEC 62209-2 (trunk = body-worn, separation distance can apply)
- Mobile phones are tested for compliance at the highest possible power level.
- Video on SAR testing:

  - Get more info at: www.emfexplained.info/?ID=24898

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Choose a low SAR phone

?

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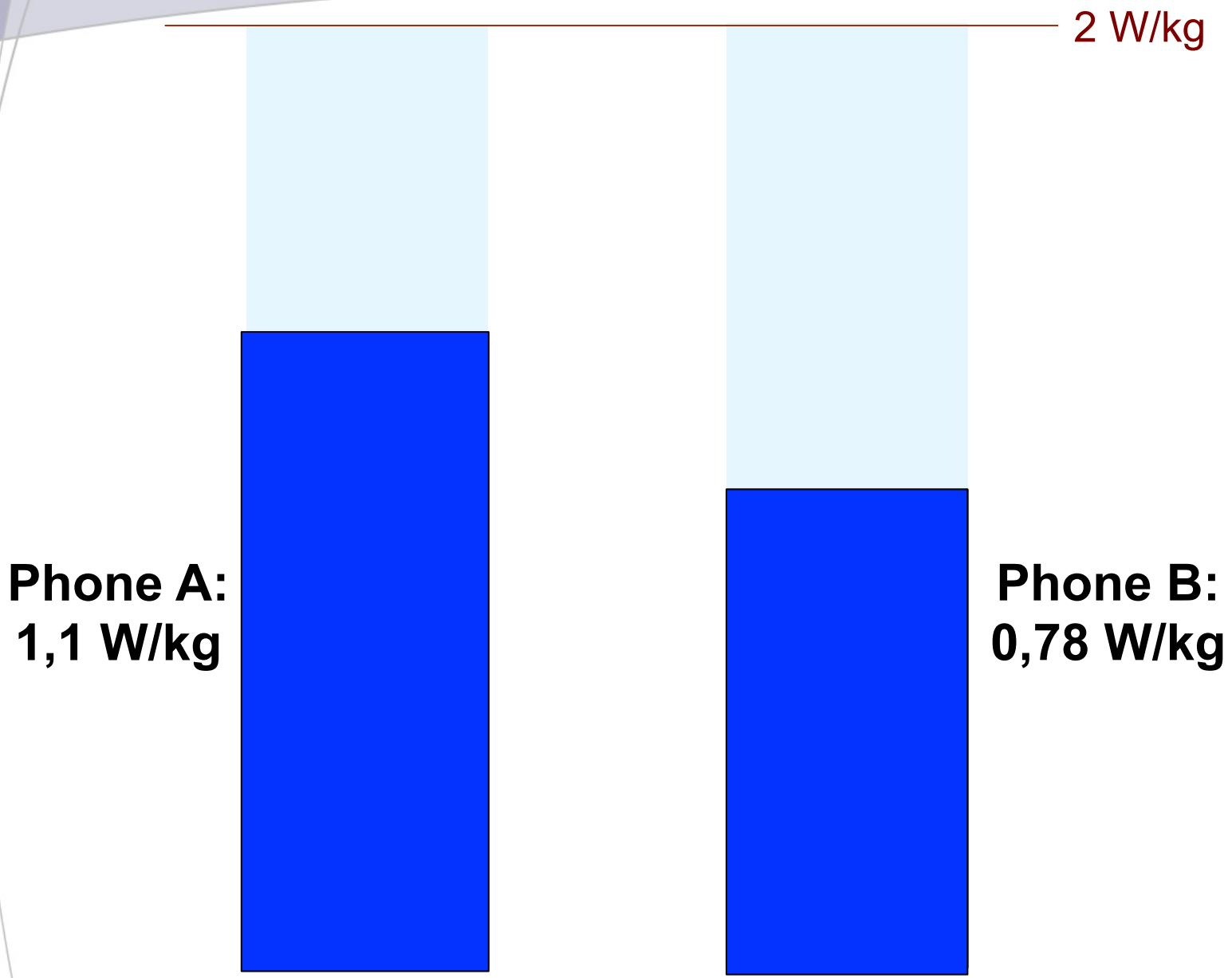
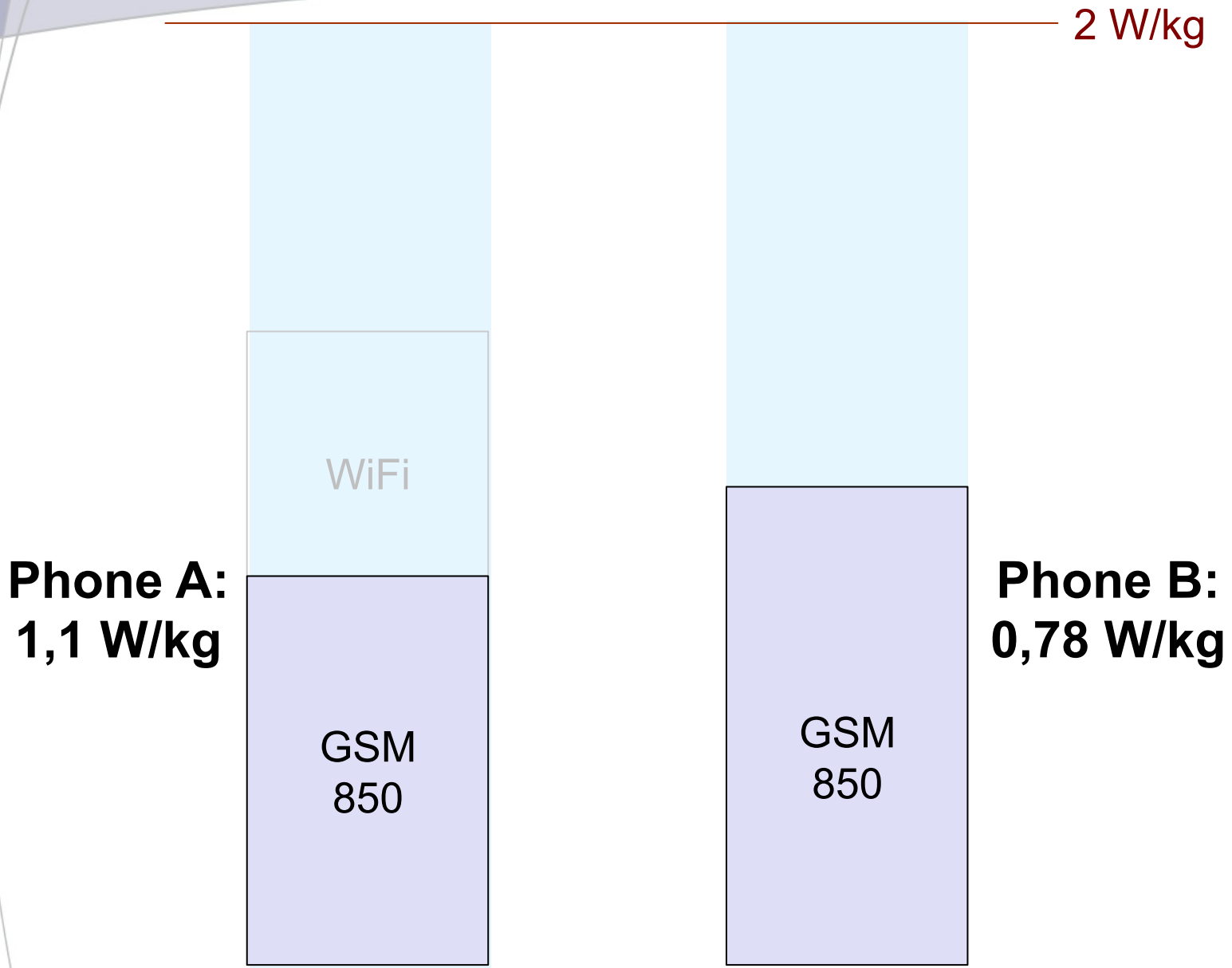
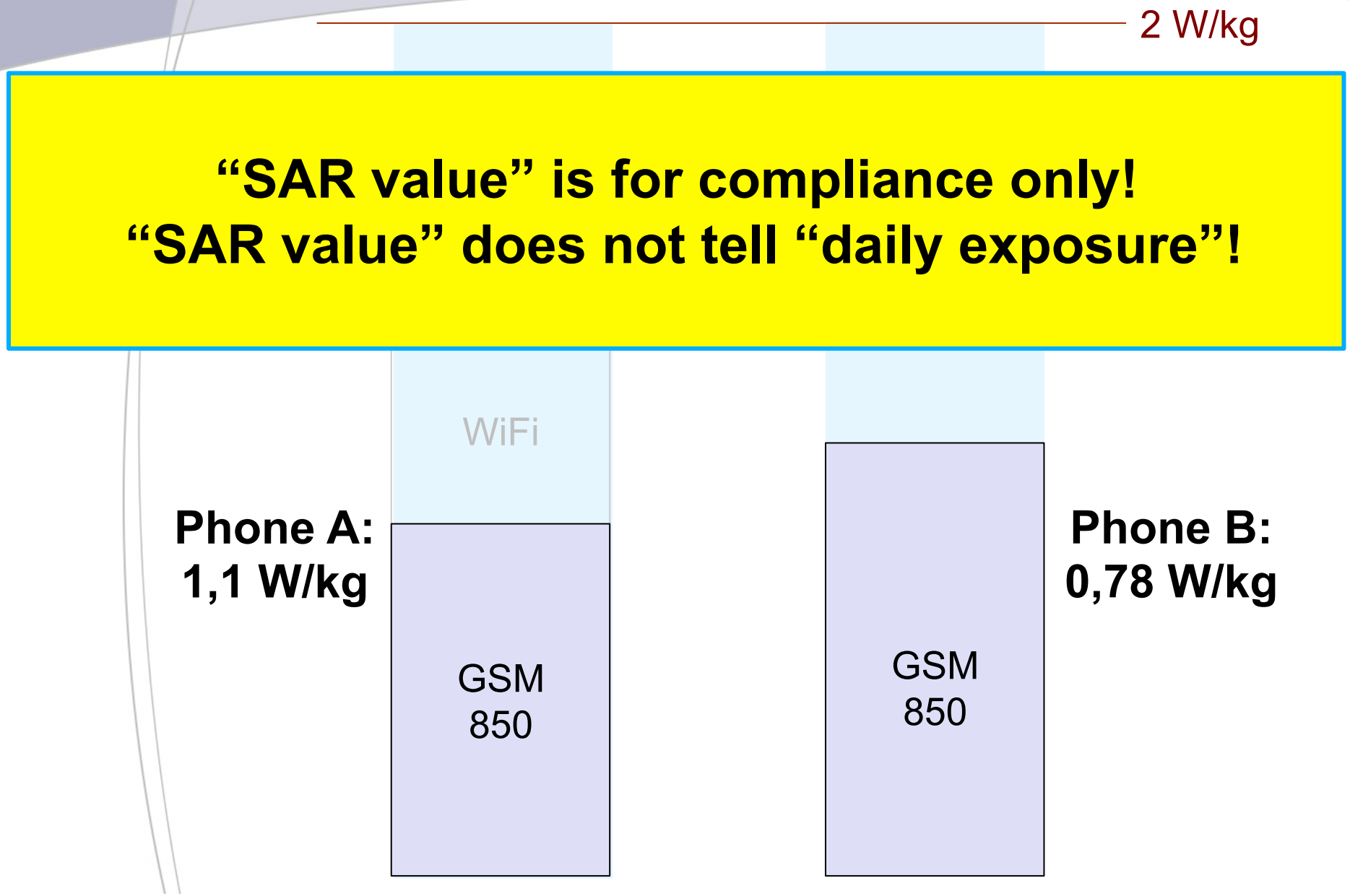
Choose a low SAR phone! … Really?



Choose a low SAR phone! … Really?



Choose a low SAR phone! … Really?



SAR value: compliance ✓

~~daily exposure~~

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- = 1 Watt / kg
- = 1 Watt / kg

50-fold reduction factor

Established Adverse Health Effect:	ICNIRP SAR Limit General Public Head+Trunk:	Exposure technically minimized by:	Exposure can be further reduced by:
		Adaptive Power Control	hands-free kit texting

All compliant mobile phones are equally safe.

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Adaptive Power Control

Thank you.
Questions? Further Information needed?

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Since December 2006:
MMF's Director for Europe, Middle East and Africa

2001 – 2006:
Managing Director, Forum Mobilkommunikation, Austrian national trade organisation

1990 – 1999:
Member of the Austrian Federal Parliament, focused on infrastructure issues, telecommunication, renewable energy and environment

1990: Master of Laws, University of Graz, Austria.