

RF FIELDS: ACTIVITIES IN BRAZIL

Maria Aparecida Muniz Fidelis da Silva

aparecida@anatel.gov.br

+55 61 2312-2372

Agenda

- **Resolution nº 303**
- **Activities**
- **NIR Enforcement**
- **Automated NIR Monitoring**
- **EMF Database**
- **Events Participation**
- **Questions**

Resolution nº 303

- Considering the concern about the proliferation of mobile telephony towers and possible health effects of EMF, in July 1999, Anatel adopted the ICNIRP guidelines for limiting exposure to RF fields that provide protection for workers and the general public against known adverse health effects.
- In July 2002, besides the ICNIRP NIR limits, Anatel established procedures for evaluate the compliance with the threshold adopted, calculations, measurement and enforcement. The resolution nº 303 is a reference in Brazil, was used as reference in other countries, is followed by every radiocommunication station in Brazil and is cited in journals and Technical Papers.

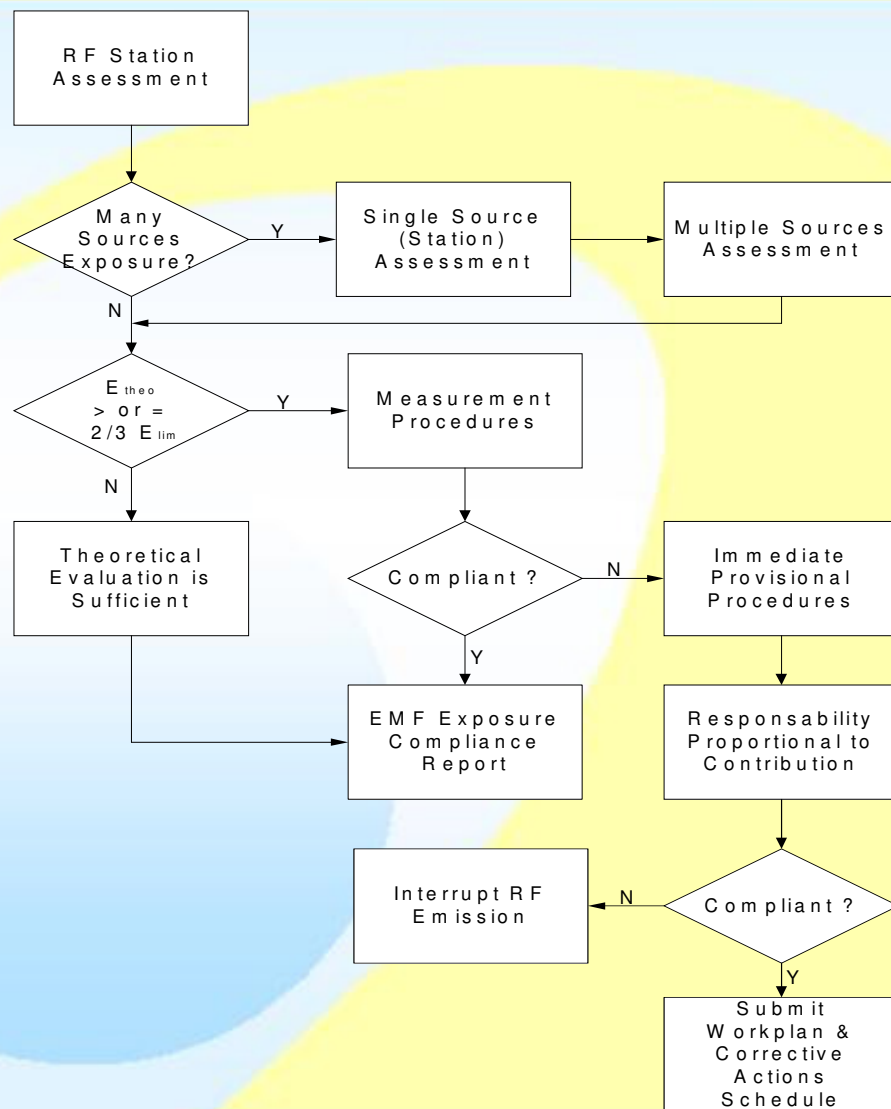
- **Anatel is developing many activities related to Non Ionizing Radiation, such as:**
 - ✓ Regular enforcement activities
 - ✓ A new automated NIR monitoring network system
 - ✓ National EMF database
 - ✓ Events Participation

Regular Enforcement Activities

- ANATEL has been performing more than 1000 NIR measurements every year. These measurements are planned on Anatel's annual enforcement plan or in response to specific demands, coming from the society and collected from different sources, such as call center, web services and other public relations channels.
- ANATEL has 12 wide band equipment (isotropic probe) and 30 narrow band equipment (optimized spectrum analyzer).

NIR Enforcement	2005	2006	2007
Mobile Telephony	971	1131	979
Total	1071	1264	1107

NIR Enforcement

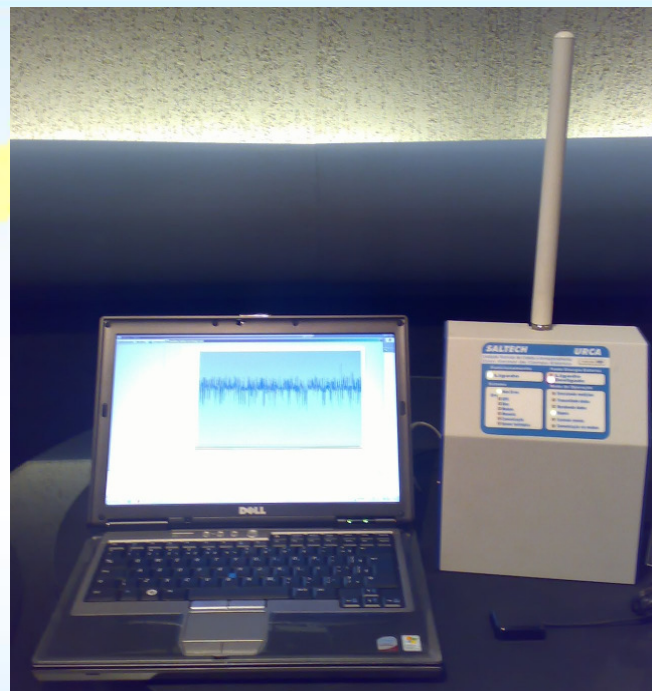


Automated NIR Monitoring

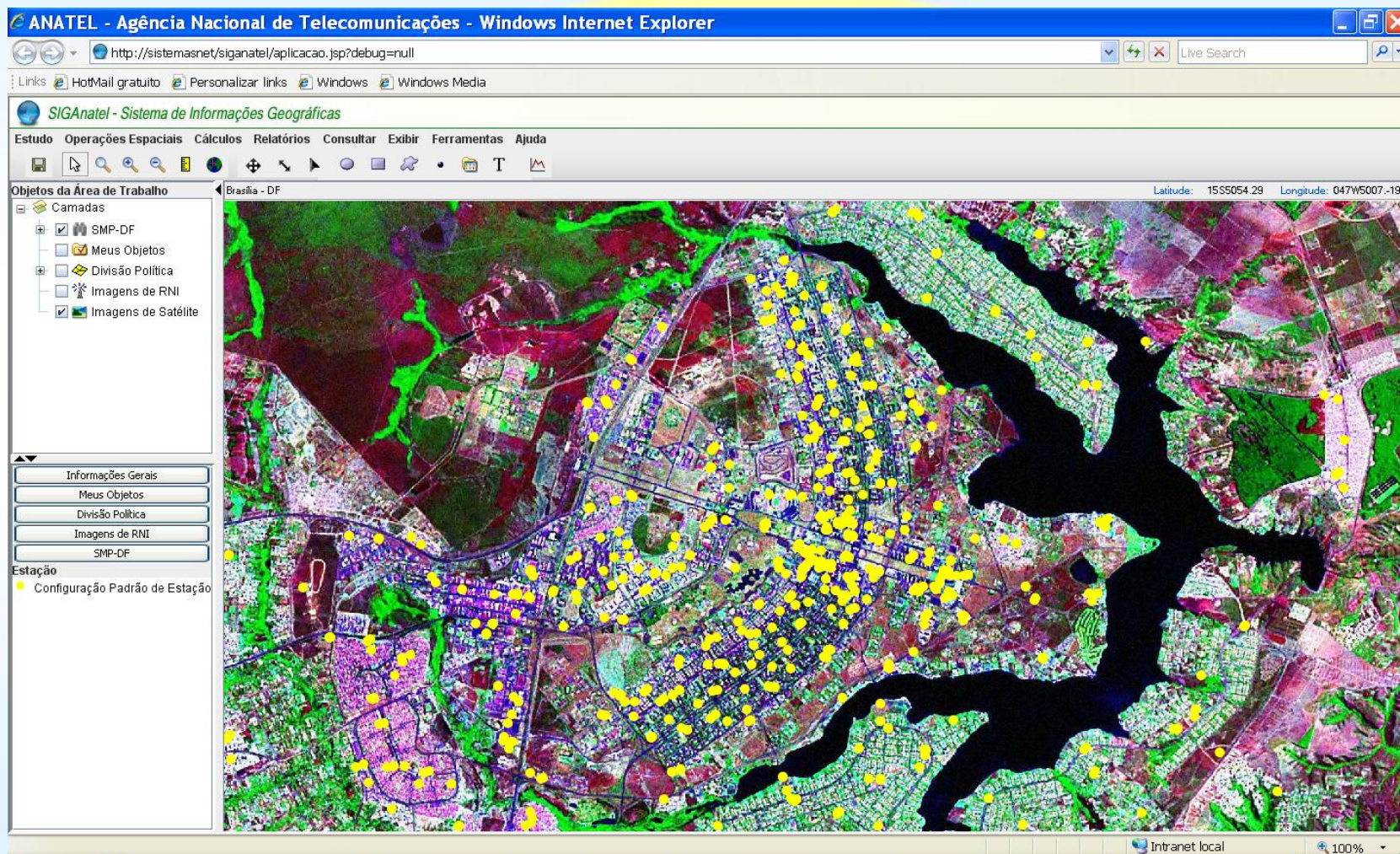
- Non Ionizing Radiation Monitoring systems are employed as a part of management risk information system used by national regulators in order to promote conscious awareness on the subject and deal with people concerns on this matter. The automated NIR monitoring network will be composed by 52 complete equipments that can be used in cars or fixed in lampposts or any other fixed places. It will be in operation in the end of 2008 and the results from measurements are expected to be publicized by the beginning of 2009.



Automated NIR Monitoring



BTS in Brasília – Pilot Plan



Telecom Station Query – Example

Pesquisa Estações por Entidade/Endereço (232/212)

Dados da Entidade

Razão Social/Nome:	14 BRASIL TELECOM CELULAR S/A	Número FISTEL:	50013052683
CNPJ/CPF:	05423963000111		
Serviço:	010 - SERVIÇO MOVEL PESSOAL		
Qtde. Estações:	305		

Dados do Contrato

Nº Entidade:	1364219	Tipo:	Autorização	Situação:	Em Vigor
Nº Ato de Serviço:	33115/2002	Data:	11/12/2002	Data Publicação:	12/12/2002
Nº Contrato/Termo de Serviço:	028/2002	Data:	18/12/2002	Data Publicação:	23/12/2002

Lista de Estação(ões) por Localidade

Estação nº683920472 / Licenciada

Det. Nome	Tipo Estação	UF	Município	Bairro	Logradouro	Latitude	Longitude	Alt.	Dt Inclusão	Dt 1ª Lic.	Dt Últ. Lic.	Dt Imp. Lic.
☐ DF_BSA_014	Estação Rádio Base	DF	Brasília	SCN	SCN Q. 3 CONJUNTO 02 LOTE F - nº S/N	155471760	47W530790	1088	15/10/2003	26/01/2004	28/04/2008	05/05/2008

Antenas

Setor	Tipo Antena	Ganho	Frente Costa	Ângulo 1/2 Potência	Ângulo Elevação	Azimute	Polarização	Altura	Raio Cobertura	Código Equipamento	Quantidade Antena/Setor
1	817	17,5	30	67	7	0	X	35	6	0670031933 - 4249	1
1	817	15,2	30	63	7	0	X	35	6	0121021293 - 12862	1
2	817	15,2	30	63	7	120	X	35	6	0121021293 - 12862	1
2	817	17,5	30	67	7	120	X	35	6	0670031933 - 4249	1
3	817	17,5	30	67	7	240	X	35	6	0670031933 - 4249	1
3	817	15,2	30	63	7	240	X	35	6	0121021293 - 12862	1

Equipamentos

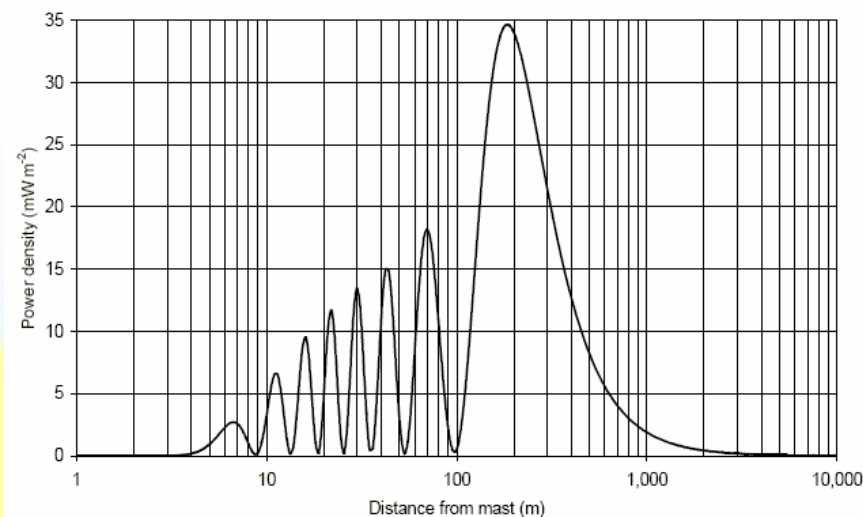
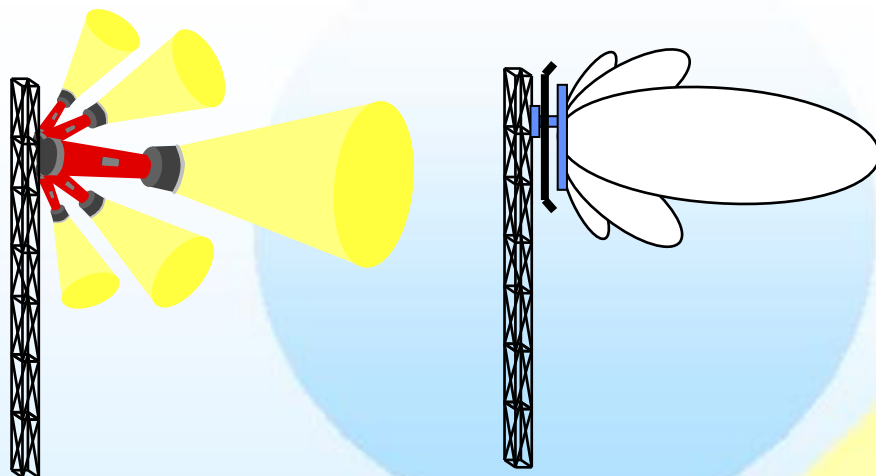
Setor	Transmissão	Designação Emissão	Código do Equipamento	Potência	Rede	Quantidade Equipamento/Setor	Data Validade RF
2	1835,00 MHz a 1850,00 MHz	200KM7W--	0864030635 - 5668	28,2 W	3029	4	22/12/2017
3	1835,00 MHz a 1850,00 MHz	200KM7W--	0864030635 - 5668	28,2 W	3029	4	22/12/2017
1	1835,00 MHz a 1850,00 MHz	200KM7W--	0864030635 - 5668	28,2 W	3029	4	22/12/2017
1	2110,00 MHz a 2125,00 MHz	5M00G9W--	1893071882 - 20546	39,4 W	3029	1	30/04/2023
2	2110,00 MHz a 2125,00 MHz	5M00G9W--	1893071882 - 20546	39,4 W	3029	1	30/04/2023
3	2110,00 MHz a 2125,00 MHz	5M00G9W--	1893071882 - 20546	39,4 W	3029	1	30/04/2023

There are more than 1,000 BTS in the Federal District!

- **Anatel actively participates in many events related with Non Ionizing Radiation in Brazil and abroad, such as:**
 - ✓ Public Audiences and workshops, including the accompanying of municipal, state and federal (Law Project 31/2008) legislation
 - ✓ Mercosul – next meeting December/2008
 - ✓ ITU-T Study Group 5 (protection against electromagnetic environment effects) – next meeting November/2008
 - ✓ ICNIRP and IAC Meetings

Public Audiences and Workshops

- Anatel has been emphasizing and clarifying that technical aspects should not be treated in local legislation
- Management of Visual Impact (sharing, integration to urban landscape, rooftop/frontage installation and infrastructure integration)



➤ **Series K: Protection Against Interference**

- ✓ K-52 – Guidance on complying with limits for human exposure to electromagnetic fields
- ✓ K-61 – Guidance to measurement and numerical prediction of electromagnetic fields for compliance with human exposure limits for telecommunication installations
- ✓ K-70 – Mitigation techniques to limit human exposure to EMF in the vicinity of radiocommunication stations
- ✓ **K-Guide – Guidance on how to manage human exposure to electromagnetic fields**

QUESTIONS ?



National Telecommunications Agency

Superintendence of Radiofrequency and Enforcement

General Management of Certification and Spectrum
Engineering



ANATEL

Management of Spectrum Engineering