

# **How To Use PowerPoint**

## **A Brief Introduction to Commonly Used Features**

**By Ryan McKenzie**

# Introduction

PowerPoint is a very commonly used, fairly powerful presentation software from Microsoft. In your academic career (undergrad, graduate, or professional) there is a good chance that you have been or will be exposed to this tool. Furthermore, most of you will need to use it. This slide show is intended not only to be presented as a user guide to PowerPoint, but to be distributed as a way to practice what you learn as you learn it.

# What Will be Demonstrated

- Adding Slides to a Presentation
- Using a Uniform Appearance/Motif
- How to Vary Slide Layout and Text (font, size, color)
- Using Graphics from ClipArt or a File
- Using Animated Text (Timed and Manual)
- Applying Slide Transitions
- Adding Sound (From a File or the Gallery)
- Using AutoShapes
- Adding Videos and Animation
- Placing Action Buttons for Nonlinear Slide Selection
- Linking to Web Content or Email Addresses

# Adding/Formatting Slides

- Right-Click the Timeline to the left ← and go to “New Slide”
- OR go to “Insert” and select “New Slide”
- Open the “Layout” tab to the right → to change the format of a slide

# Appearance/Motif

- You can Apply a Motif by Opening the “Design” tab on the right →
  - Then Click on the Desired Motif to apply it to all slides
  - Click on the small drop down if you wish to apply the motif to only the current slide

# Variation in Layout and Text

- To Select a New Slide Layout, Open the “Layout” Tab to the right →
- You can Use the Font **Color** drop down menu to change the text color
- Use the Drop Down Font and **Size** menus above to vary the text

# Clip Art Graphics

- To Insert ClipArt, go to “Insert” and put your mouse on “Picture”
- Another Menu will Open, select ClipArt
- Once you Select your Image, You must Position and Resize it with the Mouse



# File Graphics

- To Insert a File Image, go to “Insert” and put your mouse on “Picture”
- Another Menu will Open, select “From File”
- Once you Select your Image, You must Position and Resize it with the Mouse



# Animated Text (Manual)

- 1) Set Up your Slide the Way You Want
- 2) Go to “Slide Show”
  - and select “Custom Animation”
- 3) Highlight The Section You Wish To Animate
- 4) Click “Add Effect” At the Upper Right →
- 5) Select and Preview Your Effect
- 6) Highlight Your Effect and Make Sure the “Start” drop down is set to “On Click”
- 7) To Preview Your Slide Click “Play” at the Lower Right →

# Animated Text (Timed)

- Use the Same Basic Steps as Before
- Select the Desired Animation from the Right →
- Press the Drop Down and Select “Timing”
- Make Sure the “Start Box” is set to “After Previous”
- Set a Delay Time and You’re Done

# Slide Transitions

- While Working with the Slide you Wish to Transition into, go to “Slide Show” and select “Slide Transitions”
- A List of Available Transitions will Appear on the Right →
- Once you Select your Transition, you can Change the Speed or Even Add Sound!



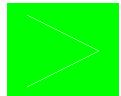
# Using “Canned” Sounds

- To Add a Sound Clip to Your Slide, go to “Insert” and Extend the Menu if Necessary
- Place your Mouse over “Movies and Sounds”
- Select “Sound From Clip Organizer” to use the “canned sounds” provided by Office
- Select Your Sound to the Right → and then Choose Whether to Play it Automatically or on Click

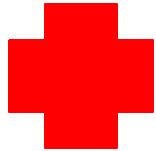
# Using Sound Files



- To Use a Sound File of Your Own, Follow the Same Process Except this time Select “Sound From File”
- Choose the File from the File Browser
- Notice a Small Speaker Icon is Inserted with any Sound, This WILL BE VISIBLE during the Slide Show so Position it Accordingly

Jump Back To “Action Buttons”... 

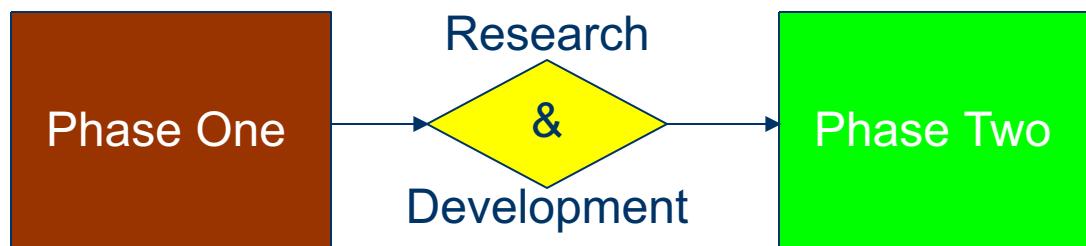
# AutoShapes



- AutoShapes are Convenient for Making Quick Illustrations or Diagrams such as Flow Charts
- Go to “Insert” and place your Mouse Over “Picture”
- Select “AutoShapes” and a Small Floating Menu Will Appear in the Editing Area
- Click on a Category of AutoShapes to see what Shapes are Available
- Click the Desired Shape from the Drop-Down and Draw it on Your Screen
- After Drawing an AutoShape, you can Position and Resize it as you Please
- Double-Click on an AutoShape to Change its Color and Other Options

# Advanced AutoShapes

- By selecting several AutoShapes and right-clicking, you can group them together.
- Any of the Custom Animations we Used for Text Sections can be Applied to Groups or Single AutoShapes



# Embedding Video

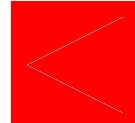
- To Play a Video in Your Slide Show, go to “Insert” and Place your Mouse Over “Movies and Sounds” then Select “Movie From File”
- Any Movie that is Supported Will Automatically be Shown When you Browse for the File
- Once the Video is Inserted, Select if You Want it to Play Automatically
- Then, you can Position and Size the Video how You Wish



# Action Buttons

- You can Add Action Buttons to Move Around non-linearly in Your Presentation
- Go to “Slide Show” and Select “Action Buttons”
- Select Your Desired Button Type then Draw Your Button and a Window Will Appear
- Set Up your Properties, then you can Double Click the Button to Change Color
- You Can Also Resize and Position the Button After it is Created

Go See HAL Again...



# Linking to Web Content

- You Can Link to Web Content and Open it During Your Slide Show
- The Computer You Used During the Slide Show MUST Have Internet Access
- Highlight a Section of Text and Right-Click it
- Select “Hyperlink” (Any Spelling or Grammar Errors must be corrected or ignored to select “hyperlink”)
- Fill In the Address for Your Target Content
- Click HERE to Visit [www.campcaleb.com](http://www.campcaleb.com)

# Adding Email Links

- A Good Idea is to Add Your Email Address or other Contact Information to Your Slide Show
- You Add an Email Address the Same Way you Link to Web Content, EXCEPT in the Address Field You Need to Type:
  - “mailto:youremail@yourdomain.com”
- For More Help or Information Contact Me:
  - Ryan N. McKenzie
  - (859) 257-8745
  - rnmcke0@uky.edu

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manipulation language, and a data control language. The scope of SQL includes data insert, query, update and delete, schema creation and modification, and data access control. Although SQL is often described as, and to a great extent is, a declarative language (4GL), it also includes procedural elements.

SQL was one of the first commercial languages for Edgar F. Codd's relational model, as described in his influential 1970 paper, "A Relational Model of Data for Large Shared Data Banks."<sup>[10]</sup> Despite not entirely adhering to the relational model as described by Codd, it became the most widely used database language.<sup>[11][12]</sup>



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# **How To Use PowerPoint**

## **A Brief Introduction to Commonly Used Features**

**By Ryan McKenzie**

# Introduction

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# What Will be Demonstrated

- Adding Slides to a Presentation
- Using a Uniform Appearance/Motif
- How to Vary Slide Layout and Text (font, size, color)
- Using Graphics from ClipArt or a File
- Using Animated Text (Timed and Manual)
- Applying Slide Transitions
- Adding Sound (From a File or the Gallery)
- Using AutoShapes
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- Placing Action Buttons for Nonlinear Slide Selection
- Linking to Web Content or Email Addresses

# Adding/Formatting Slides

- Right-Click the Timeline to the left ← and go to “New Slide”
- OR go to “Insert” and select “New Slide”
- Open the “Layout” tab to the right → to change the format of a slide

# Appearance/Motif

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  - Then Click on the Desired Motif to apply it to all slides
  - Click on the small drop down if you wish to apply the motif to only the current slide

# Variation in Layout and Text

- To Select a New Slide Layout, Open the “Layout” Tab to the right →
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# Clip Art Graphics

- To Insert ClipArt, go to “Insert” and put your mouse on “Picture”
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# Animated Text (Manual)

- 1) Set Up your Slide the Way You Want
- 2) Go to “Slide Show”
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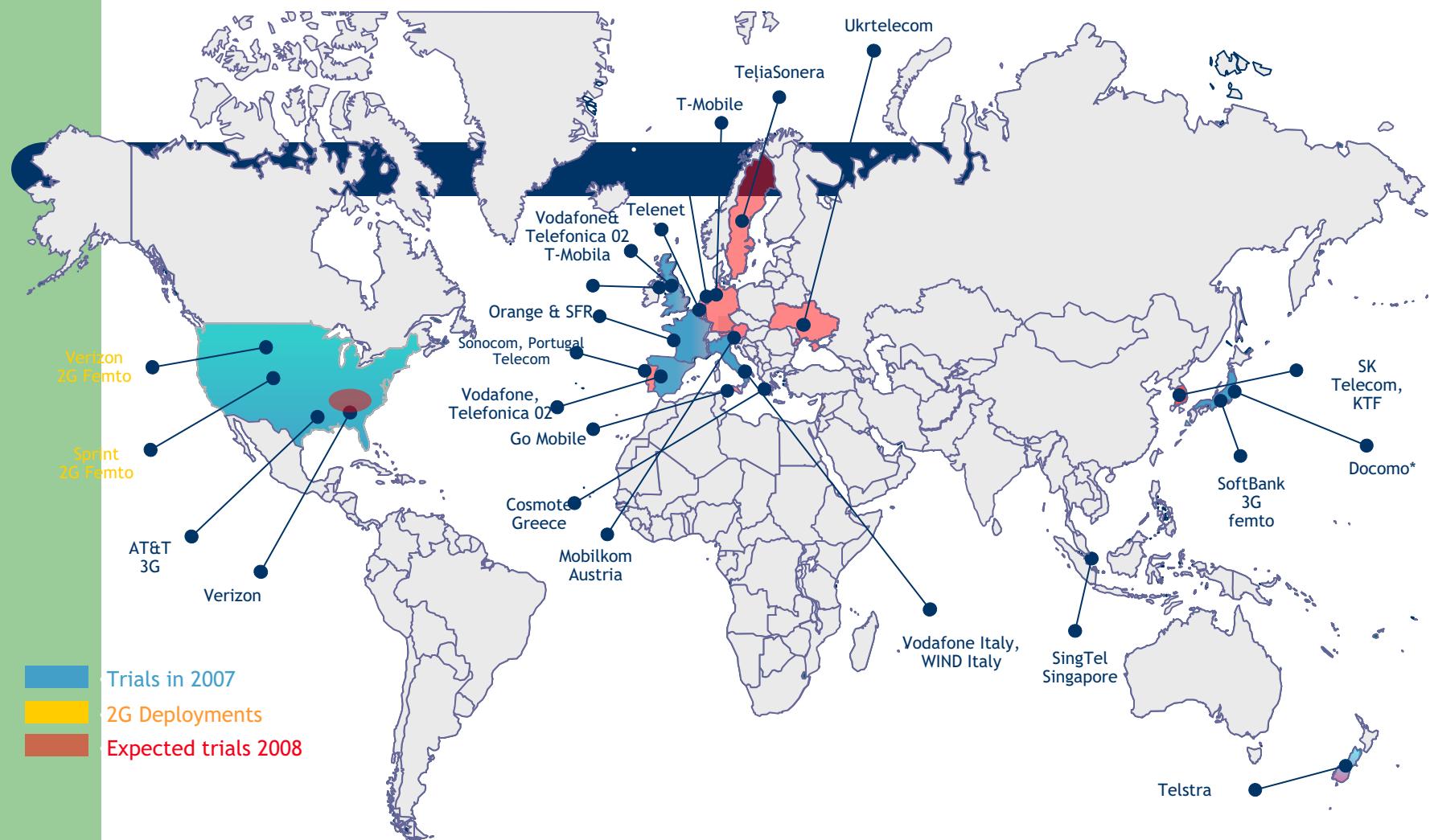
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# Femtocell Activity by Operator





# Femtocell Activity by Operator

Mobile Operator	Announced Date	Trial Date	Any Details	Solution Providers
AT&T (US)			Ongoing trial 1900MHz (2007) Signed deal with ip.access in Apr-08 for potential 7 million femtocells	Cisco/ip.access and NSN/Airvana
CHT (Taiwan)	Q2 2008	Q2 2009	RFP July 2008	
Comcast	June 2008		Exploring	
HSL (UK)	Jan 2008	Q4-2008	2.75G Femto	
KTF (S. Korea)			Q2 2008	ALU (April 2008)
KPN			Remote Trial planned Q2 08	
Mobilkom (Austria)				ALU
O2 UK	Feb 2008	Early 2009	Start trials in April 2008 and if successful will be extended to 500 users across UK in the summer. Names Vivek Dev COO Telefonica O2. Name: John Carvelho (Head of Core Network Innovations).	NEC (Kineto, Ubiquisys) ZTE
O2 – Manx			Remote Trial planned Q2 08	
O2 – Czech Republic				
Orange			Currently concentrated on the Enterprise Femto. Short listed with 4 others following the Enterprise RFP, negotiation ongoing	RFP: Huawei, ZTE, ALU, and NSN or Motorola
Orascom			Multiple countries	Selected Ip.access
Partner			Remote Demo – connection to core network in Nuremberg	
SFR (France)			Planning trial Q1 2008	ALU Q1 2008 Ongoing with Motorola/Ubiquisys, NSN? RFQ: Ubiquisys, Ip.access, NSN, Huawei, ALU
SingTel			Trial requested, expected in 2H08	TE is completing now a 2G Femto 3G Femto trial in Q1 2008

# Femtocell Activity by Operator

STARFENT

Mobile Operator	Announced Date	Trial Date	Any Details	Solution Providers
SKT (S. Korea)	Nov 2007	Q2 2008	WCDMA trial only	Huawei
StarHub			6 month market assessment trial since May 2008 with 200 subscribers. Name: Anil Nihalani, Head of Mobile Services	Huawei and ZTE
SoftBank		Q4 2007	In March 2008 Junichi Miyakawa (CTO Softbank) said commercial trial in May and mass deployment in October.	NEC and Ubiquisys (e-auction) Evaluating: Ubiquisys or ALU
TeliaSonera Denmark	Feb 2008	2Q 2008		ALU
TeliaSonera Lithuania	Feb 2008	2Q 2008		Motorola (Kineto and Ubiquisys)
Telstra (New Zealand)			Trial planned April 08	Lab trial ongoing with Huawei & Ericsson (2G)
Telenet (Belgium)			Connection to remote system requested (scheduled Q2 08)	
TMO – Germany	Feb 21, 2008	Q2 2008		Phase 1 evaluation Huawei RFQ issued in Q2-08.
TMO – Netherlands	Feb 21, 2008	Q2 2008		Phase 1 evaluation ip.access
TMO – UK	Feb 21, 2008	Q2 2008	Name: Emin Gurdienli (Technology Director at T-Mobile UK )	Phase 1 evaluation ip.access
TMO – USA	Jun 2008	July 2 2008	T-Mobile @Home with HiPort router	

# Femtocell Activity by Operator

Mobile Operator	Announced Date	Trial Date	Any Details	Solution Providers
Telecom Italia				ALU: studying remote demo or Proof of Concept in ALU premises. Trial with Huawei and another vendor ip.access or NSN?
Telefonica de España			On going	Ongoing Trial with ALU and Huawei
Verizon	April 2008	In 2008?		
Vodafone Italy				Ip.access
Vodafone Ireland				Ip.access
Vodafone Portugal				Ip.access
Vodafone Spain	Jan 2008	1Q 2008	Ongoing. Name: Andy MacLeod (Dir Global Networks)	ALU, Huawei ip.access/Thomson/Cisco
Vodafone UK				Ip.access
Wind (Italy)			Trial requested for March 08.	ALU Business Case submitted Q&A ongoing

# Femtocell Vendor Summary

## E2E solutions



**NEC**

Partners for  
gateway and  
CPE



Self deployed + 2  
new own CPEs +  
CPE partners



Partners for CPE +  
gateway



CPE+ Gateway +  
partners

### Home Node-B

Standalone



RADIOFRAME



Integrated



### HNB-Gateway



Integrated



### Controller / Convergence Server



### Media Gateway



### Management



# Femto Solution Comparison Summary

Airvana 	<ul style="list-style-type: none"> <li>▪ Marketing Gateway and CPE</li> <li>▪ Product offering is based on UNG and CPE (acquired 3-way)</li> <li>▪ High degree of market perception and technology leadership</li> </ul>
Alu Alcatel-Lucent 	<ul style="list-style-type: none"> <li>▪ Marketing own Gateway and CPE partners (Sagem being the most significant)</li> <li>▪ Product offering is a mix of repurposed solutions: BSR (FAP), VPN router (SeGW), IP/ATM switch (Iu Controller)</li> <li>▪ Moderate market traction with tier 1 operators, 2 ongoing trials. Strong influence at AT&amp;T</li> </ul>
E/// 	<ul style="list-style-type: none"> <li>▪ Positioning only GSM femtocell</li> <li>▪ No clear plans for a 3G solution until 2009</li> <li>▪ Little traction and late entry into Femto</li> </ul>
HUA 	<ul style="list-style-type: none"> <li>▪ Positioning for UMTS</li> <li>▪ Product offering is their own end-to-end solution</li> <li>▪ Market traction in European (Vod, Telfonica, O2, Orange), and Asian (StarHub) operators (approx. 6 trials)</li> </ul>
IPaccess 	<ul style="list-style-type: none"> <li>▪ Positioning a complete solution Oyster 3GT including Femtocell Gateway and CPE plus additional partnerships for femtocell</li> <li>▪ Strong investment from Cisco, developing specific solutions for large customers</li> <li>▪ Selected by AT&amp;T</li> </ul>
MOTO 	<ul style="list-style-type: none"> <li>▪ Launched two femtocell access points (standalone and integrated)</li> <li>▪ Claims an end to end solution but no much market traction or product information available .</li> <li>▪ One completed trial in Europe announced</li> </ul>
NEC 	<ul style="list-style-type: none"> <li>▪ Strategic focus on time-to-market and complete SI solution</li> <li>▪ Product solution is based on SI multi-vendor offering: NextPoint, Kineto, Ubiquisys (currently evaluating other SeGW)</li> <li>▪ Good market traction in Asia (Japan) and Europe ( approx. 8 trials)</li> </ul>
Nortel 	<ul style="list-style-type: none"> <li>▪ TBD</li> <li>▪ TBD</li> <li>▪ TBD</li> </ul>
NSN 	<ul style="list-style-type: none"> <li>▪ Strategy to push proprietary Iu/IP interface with CPE partners (Airvana, Ubiquisys)</li> <li>▪ Driving economies of scale with a wide choice of femtocell Access points</li> <li>▪ Relative market traction with tier 1 operators, 2 ongoing trials. Selected by AT&amp;T</li> </ul>
ZTE 	<ul style="list-style-type: none"> <li>▪ Femtocell solution with partners for the CPE (Samsung) and the Gateway (Nextpoint)</li> <li>▪ Limited customer traction, one trial announced so far</li> </ul>



# Market and Competitive Landscape Femtocell

August 28, 2008



INTELLIGENT  
*PERFORMANCE*

# Femto Solution Comparison

## Product Strategy



Vendor	Product Names	Strategy	CPE Solution	HNB-GW Solution	Trials	Availability
ALU 	9365 BSR Femto BSG BVG OMC-BSR	Network integration strategy Integrated solution Gateway + Multivendor CPE	Sagem (based on BSR), 2Wire Standalone 9365 BSR Femto Integrated 9365 BSR Femto	BSG – BSR Signaling Gateway BVG – BSR Voice Gateway Firewall based on Lucent VPN Firewall Brick 1200 platform BPG – BSR Packet Gateway Supports 64K BSR requiring 2 Telco Racks	<b>Approx. 9:</b> Vodafone (Italy, Spain), SoftBank, AT&T with 2Wire, Mobilkom Austria. Planned VDF SFR, Portugal, Greece, TeliaSonera (Denmark),	Q1 2008
Huawei 	uBro	Integrated solution HNB and HNB-GW based on internal technology and development. Always a Low cost strategy.	Standalone CPE (Node B and RNC) Up to 4 HSDPA or 4 HSUPA users Max Tx power 30mW 4 AMR voices and 8 packet data sessions simultaneously	Rev 1: luIP with SGSN Rev 2: luH with or w/o SGSN Rev 3: luH with or w/o SGSN plus GGSN offload	<b>Approx. 7:</b> Vodafone (Spain, Italy), Telefonica 02 (Spain), SK Telecom, Ukrtelecom and Orange France, Starhub Planned in Q2 2008 with T-Mobile (UK, Netherland and Germany)	Rev 1: Q1 2008 Rev 2: Q1 2009 Rev 3: 2009
IP.Access 	Oyster 3G Access Point Oyster 3G Access Controller	Integrated femtocell solution HNB+ Gateway + OAM&P. Proprietary interfaces lu+ between HNB and HNB-Gateway	Standalone CPE Integrated CPE (with Thomson) Max TX power 5mW HSDPA 7.2Mbps 4 simultaneous calls AMR and W-AMR supported	Controller platform is 12U single ATCA shelf 20,000 Oyster 3G per shelf Max of AMR 12.2 luCS 5000 Erl per shelf Max of 1 Gbps luPS	<b>Approx. 12:</b> Vodafone Italy, AT&T: NSN (ip Access & Airvana CPE) and Cisco & ip. Access, Teliasonera, Orascom (Greece, Algeria, Egypt, Pakistan, Iraq, Bangladesh, Tunisia and Zimbabwe), T-Mobile EU, HECL (India), KPN (Nethlnd.), O2 (Czech), SMART (Indonesia), Proximus (Ukraine), TMO-USA	Launched in 2007. HSUPA GA Q2 08 Plans for luH in late 2009.
MOTO 	Horizon 3Gi Residential Solution 8000 Series (Standalone HNB) 8100 Series (Integrated Wifi, 4port switch, ATA/VoIP)	Leverage own CPE and 3rd party solution for end-to-end offering.	HNB – Moto DSL + Ubiquisys Software MNGMT. Netopia Broadband Server	GAN-lu Controller – Kineto SeGW – AudioCodes (Netrake) MGW – AudioCodes	<b>Approx. 6:</b> SFR with Ubiquisys,	Trials – Since Q1 2007 Moto CPE -- TBD
NEC 	3G Gateway	Integrated and open interfaces E2E (CPE, Gateway, NM systems)	Ubiquisys (CPE)	GAN-lu Controller -- Kineto SeGW – NextPoint (Reefpoint) MGW – GenBand	<b>Approx. 8:</b> 2008 Telefonica O2 UK,	Q1 2008
NSN 	3G Femto Home Access	Integrated solution - pen ecosystem approach Own femto gateway + CPE partners+ Femto OAM&P	Radio Frame (CPE) Thomson (Home Networking devices) Airvana , ip.access, Ubiquisys, Pirelli (CPE)	driving an open CPE ecosystem with a proprietary lu/IP interface.	<b>Approx. 2:</b> 2008 Trail with AT&T with Airvana Potential Ukrtelecom in 2008	Q1 2008 for trials Commercial targeted for Q3-2008.
Sam 	UbiCell	CDMA market Developing WCDMA	ReefPoint for security gateway (Sep. 2007) ZTE	Network integration kit with plans to support CDMA, W-CDMA and WiMax	Sprint Verizon	CDMA 2007 UMTS 2008
ZTE 	ZX UHA (UMTS Home Access)	Integrated solution lu+ + UMA approach ZX HNodeB, ZX DNC, HCS server, OMC and SGW.	Samsung to design and develop Home AP	Yes	Samsung (W-CDMA femto cell) NextPoint (Femto Cell gateway FCG) Telefonica O2 StarHub?	Femtocell launched in Oct 2007

# Femto Solution Comparison

## Features



	Alcatel-Lucent	NEC	HUAWEI	Nokia Siemens Networks	Ubiquisys	ip-access	ZTE 中兴
<b>Handoff</b>	Yes – Phase 4: 3G Blind Handover and • 2G Blind Handover	Yes	HO to macro cells Cell-reselection  No Ho into Ap cell (femto-Femto HO in 2009). Don't support HO from macro to Femto?	Mobility	Yes	Yes, Femto Hand-in feature	Mobility
<b>Synchronization</b>	Yes - Network Timing Server		Ip clock synch. or macro network	n/a	n/a		clock synch.
<b>Security</b>	Encryption, Authentication	Authentication	IP sec	n/a	n/a	TLS and SRTP	
<b>Access Control</b>	Admission control	Local netowkr access control	Open, closed, community	n/a	n/a	n/a	
<b>Location indication</b>	Yes	Home Zone indication	Yes	n/a	n/a		
<b>Auto configuration</b>	Plug-and-Play Auto-config. Zero-touch provisioning	Auto Service provisioning	Plug and play Auto-configuration	n/a	n/a	Plug-and-Play Zero-touch provision	Plug-and-Play Auto-configuration
<b>Services</b>	CS voice and 64kbps CS data PS 64kbps, 128kbps, 384kbps UL and DL	AMR voice and R99 PS multi RAB	WB-AMR	n/a	n/a		
<b>Remote Management</b>	Controlled by OAM			n/a	Yes		
<b>Self optimization &amp;Interference management</b>	Yes – Automatic and dynamic re-selection		Interference control and dynamic power allocation	n/a	Dynamic monitoring and power adjusting	Network listen: manage interface and neighbor cells automatically	Automatic self configuration
<b>Emergency call</b>	Yes with Cell ID location	Yes	Yes	n/a			
<b>Cell radius</b>	Up to 50m	n/a	n/a	n/a	n/a	n/a	200m max. (15m – 25m Typ. indoor)
<b>Offload</b>	?	Yes	n/a	Yes	Yes	n/a	Yes

# Femto Component Vendors

## Femto Access Points



	AirWalk <sup>®</sup> communications, Inc.	Alcatel-Lucent	NEC	Motorola	HUAWEI	ZTE 中兴	Nokia Siemens Networks	Ubiquisys	ip access
Product	EdgePoint	BSR Femto	Home Gateway solution	Horizon 3G-i residential solution	UBro	UMTS Home Access Solution	3G Femto Home Access	3G ZoneGate femtocell	Oyster 3G System
End to End	Enterprise and Consumer solutions 1x and 1xEVDO-A combo	E2E Integrated solution Femtocell+ gateway+OAM	Partners AP + Home Gateway Server System	Claims collapsed Node-B, RNC femto + Core network concentrator with SI	Integrated solution UAP3801 Home Access Point (AP), Gateway AG, AP manager	ZX HNodeB (Samsung), using Nextpoint gateway	Femto Gateway, OAM and Provisioning solution + Partner with multiple CPEs	Femto ZoneGate + Partners for management system, femto gateway, and SI services	Oyster 3G CPE, Oyster 3G Access Controller, OAM&P
Availability	Q3 Enterprise 1x Q1 Enterprise EVDO-A	Q2 2008	Q2 2008	n/a	Q1 2008	Q1 2008	Q3 2008	Q1 2008	2007 (HSUPA Q2 08)
Architecture	Collapsed BTS, BSC, PCF	Collapsed modified Iu SIP/IMS later	Full flat IP (SIP/IMS) (3GPP GAN) - Flat - Node B, RNC, PS and CS Core in the AP	collapsed	Standard Iu to core and collapsed /modified Iu SIP/IMS later	RAN Iub over IP IMS/SIP later	Open modified Iu/IP	All approaches Modified Iu over IP, UMA, SIP/IMS	Collapsed modified Iub
Cell radius		Up to 50m	n/a	n/a	n/a	n/a	n/a	200m max. (15m – 25m Typ. indoor)	n/a
Performance		HSDPA 7.2Mbps	HSDPA and HSUPA	n/a	HSDPA 9.6Mbps/ HSUPA 1.92Mbps 4.8Mbps DL in trials	HSDPA 14.4 Mbps//HSUPA 5.76 Mbps	7.2Mbps/HSDPA	Peak data rate 3.6Mbps (upgradeable to 7.2Mbps)??	HSDPA 7.2Mbps (Sw upgrade HSUPA)
Capacity		16 registered 4 active users 64K AP	Up to 4 users	n/a	4 AMR users, 8 PS users 100k AP	up to 4 users online	Up to 4 users	Up to 4 users	Up to 4 users
Interfaces		proprietary Iu-CS/Iu-PS Ethernet to DSL	Iu/IP (Up), SIP/IMSI	n/a	Proprietary (elu) Iu-CS/Iu-PS, Gn	Iub over IP	Iu open	UMA (Ub), SIP/IMS Iu-CS/Iu-PS, Gn	Iu+ (lap) Iu-CS/Iu-PS
Handover to Macro		CS only (2G and 3G)	Yes	n/a	Yes	Yes	Yes	Yes	Yes

# Femto Component Vendors

## Femto Access Points



		SAGEM	Ubiquisys	ID access	SAMSUNG	HUAWEI	THOMSON images & beyond	Airvana	NETGEAR Connect with Innovation	ZTE 中兴
<b>Product</b>		Femtocell	ZoneGate	Oyster 3G CPE	W-CDMA UbiCell	UAP3801	TG870	HubHub Home Base Station	Femtocell DVG834GH	ZXWR H8901
<b>Silicon</b>		picoChip	picoChip	picoChip	Samsung ASIC	Own	n/a	n/a	n/a	Samsung ASIC
<b>Availability</b>		Q1 2008	Q1 2008	Q4 2007	Q1 2008	Q1 2008	Trials 2Q 2008. Commercial 4q 2008	Q3 2008	Q2 2008	Q1 2008
<b>Elements inside AP</b>		RNC and Node B	Flat - Node B, RNC, PS and CS Core in an Access Point	Node B, RNC	Node B	RNC, Node B SGSN (optional)	n/a	RNC and Node B	Similar Zone Gate?	Node B
<b>Output Power</b>		20mW to 100mW	7mW	5mW	20 mW	30mW	n/a	50m W	10dB	63mW
<b>Dimensions mm &amp; Vol L</b>		170x150x35 0.95L	40 x 165 x 85* 0.56L	150x120x30 0.54L	185 x 210 x 36 1.4L	n/a 1.5L	n/a	165x38x175 1.1L	n/a	210x60x200 2.5L
<b>Weight</b>		0.6Kg (standalone) 1Kg integrated	350 g*	150g	600g	1.1Kg (picocell) 0.5Kg later	n/a	380g	n/a	1.5Kg
<b>Power consumption</b>		12 W	n/a	n/a	n/a	22W	n/a	n/a	n/a	25W
<b>Other</b>		Standalone & Integrated	Standalone	Standalone and integrated (with Thomson)	Standalone HSDPA only	Standalone	Integrated	Standalone	Integrates 7 network devices in one/ UMA lu over IP and RAN	Standalone
<b>CPE for the enterprise</b>		No	Yes the ...	No	Home or small office	Yes	No	no	n/a	Positions same product for SME

# Femto Component Vendors

## Femto Gateways



	Alcatel-Lucent	NEC	HUAWEI	Nokia Siemens Networks	ip.access	Nextpoint	Airvana
Product	BSG	Femtocell Gateway (Kineto Wireless)	Access Point Gateway (AG)	Femtocell Gateway	Oyster 3G Access Controller	ZTE Femto gateway	Airvana UAG
Availability	Q2 2008	Q1 2008	Q1 2008	Q3 2008	Q2 2008	Q1 2008	Q2 2008
Erlangs		n/a	15K/BH	n/a	5k	n/a	
Number of APs	64k BSR femtos	n/a	100K	n/a	20K	20k ubicells per RNC	160K
Interfaces	Iu-CS and Iu-PS to core	1G Ethernet, STM-1/OC-3, ST-4/OC-12 Gateway to CN-> Iu-CS, Iu-PS, MAP, SIP	IuCS, IuPS, Gn, Gi	IuCS and IuPS to core	IuCS and IuPS to core SIP/IMS	IuCS and IuPS to core with Iu concentrator	
Elements	Composed by various elements: 4 bricks, 1 BCG, IBC rack, OAM  Dimensioning performed by cluster	Mounted in 19" rack	One cabinet for AG plus AHR, clock server, IP sec gateway, OAM for AP and AG (AP manager and M2000)	Mounted in 19" rack Protocol conversion between ATM to CN and IP to CPE Separate OMS box	12U ATCA shelf, stackable	n/a	ATCA platform, one cabinet
Summary	Flexible dimensioning according to operators needs	UMA based gateway based on Kinetos UNC	Compact AG gateway High AP support	Very compact just one 19" rack		n/a	UAM based gateway. High number of APs supported

# Femto Component Vendors

## Femto Gateways



	Alcatel-Lucent	NEC	HUAWEI	Nokia Siemens Networks	ip.access	Nextpoint	Airvana
Product	BSG	Femtocell Gateway (Kineto Wireless)	Access Point Gateway (AG)	Femtocell Gateway	Oyster 3G Access Controller	ZTE Femto gateway	Airvana UAG
Availability	Q2 2008	Q1 2008	Q1 2008	Q3 2008	Q2 2008	Q1 2008	Q2 2008
Erlangs		n/a	15K/BH	n/a	5k	n/a	
Number of APs	64k BSR femtos	n/a	100K	n/a	20K	20k ubicells per RNC	160K
Interfaces	Iu-CS and Iu-PS to core	1G Ethernet, STM-1/OC-3, ST-4/OC-12 Gateway to CN-> Iu-CS, Iu-PS, MAP, SIP	IuCS, IuPS, Gn, Gi	IuCS and IuPS to core	IuCS and IuPS to core SIP/IMS	IuCS and IuPS to core with Iu concentrator	
Elements	Composed by various elements: 4 bricks, 1 BCG, IBC rack, OAM  Dimensioning performed by cluster	Mounted in 19" rack	One cabinet for AG plus AHR, clock server, IP sec gateway, OAM for AP and AG (AP manager and M2000)	Mounted in 19" rack Protocol conversion between ATM to CN and IP to CPE Separate OMS box	12U ATCA shelf, stackable	n/a	ATCA platform, one cabinet
Summary	Flexible dimensioning according to operators needs	UMA based gateway based on Kinetos UNC	Compact AG gateway High AP support	Very compact just one 19" rack		n/a	UAM based gateway. High number of APs supported

# Femto Component Vendors

## Femto Gateways



	Alcatel-Lucent	NEC	HUAWEI	Nokia Siemens Networks	ip.access	Nextpoint	Airvana
Product	BSG	Femtocell Gateway (Kineto Wireless)	Access Point Gateway (AG)	Femtocell Gateway	Oyster 3G Access Controller	ZTE Femto gateway	Airvana UAG
Availability	Q2 2008	Q1 2008	Q1 2008	Q3 2008	Q2 2008	Q1 2008	Q2 2008
Erlangs		n/a	15K/BH	n/a	5k	n/a	
Number of APs	64k BSR femtos	n/a	100K	n/a	20K	20k ubicells per RNC	160K
Interfaces	Iu-CS and Iu-PS to core	1G Ethernet, STM-1/OC-3, ST-4/OC-12 Gateway to CN-> Iu-CS, Iu-PS, MAP, SIP	IuCS, IuPS, Gn, Gi	IuCS and IuPS to core	IuCS and IuPS to core SIP/IMS	IuCS and IuPS to core with Iu concentrator	
Elements	Composed by various elements: 4 bricks, 1 BCG, IBC rack, OAM  Dimensioning performed by cluster	Mounted in 19" rack	One cabinet for AG plus AHR, clock server, IP sec gateway, OAM for AP and AG (AP manager and M2000)	Mounted in 19" rack Protocol conversion between ATM to CN and IP to CPE Separate OMS box	12U ATCA shelf, stackable	n/a	ATCA platform, one cabinet
Summary	Flexible dimensioning according to operators needs	UMA based gateway based on Kinetos UNC	Compact AG gateway High AP support	Very compact just one 19" rack		n/a	UAM based gateway. High number of APs supported

# Femto Component Vendors

## Femto Gateways



	Alcatel-Lucent	NEC	HUAWEI	Nokia Siemens Networks	ip.access	Nextpoint	Airvana
Product	BSG	Femtocell Gateway (Kineto Wireless)	Access Point Gateway (AG)	Femtocell Gateway	Oyster 3G Access Controller	ZTE Femto gateway	Airvana UAG
Availability	Q2 2008	Q1 2008	Q1 2008	Q3 2008	Q2 2008	Q1 2008	Q2 2008
Erlangs		n/a	15K/BH	n/a	5k	n/a	
Number of APs	64k BSR femtos	n/a	100K	n/a	20K	20k ubicells per RNC	160K
Interfaces	Iu-CS and Iu-PS to core	1G Ethernet, STM-1/OC-3, ST-4/OC-12 Gateway to CN-> Iu-CS, Iu-PS, MAP, SIP	IuCS, IuPS, Gn, Gi	IuCS and IuPS to core	IuCS and IuPS to core SIP/IMS	IuCS and IuPS to core with Iu concentrator	
Elements	Composed by various elements: 4 bricks, 1 BCG, IBC rack, OAM  Dimensioning performed by cluster	Mounted in 19" rack	One cabinet for AG plus AHR, clock server, IP sec gateway, OAM for AP and AG (AP manager and M2000)	Mounted in 19" rack Protocol conversion between ATM to CN and IP to CPE Separate OMS box	12U ATCA shelf, stackable	n/a	ATCA platform, one cabinet
Summary	Flexible dimensioning according to operators needs	UMA based gateway based on Kinetos UNC	Compact AG gateway High AP support	Very compact just one 19" rack		n/a	UAM based gateway. High number of APs supported

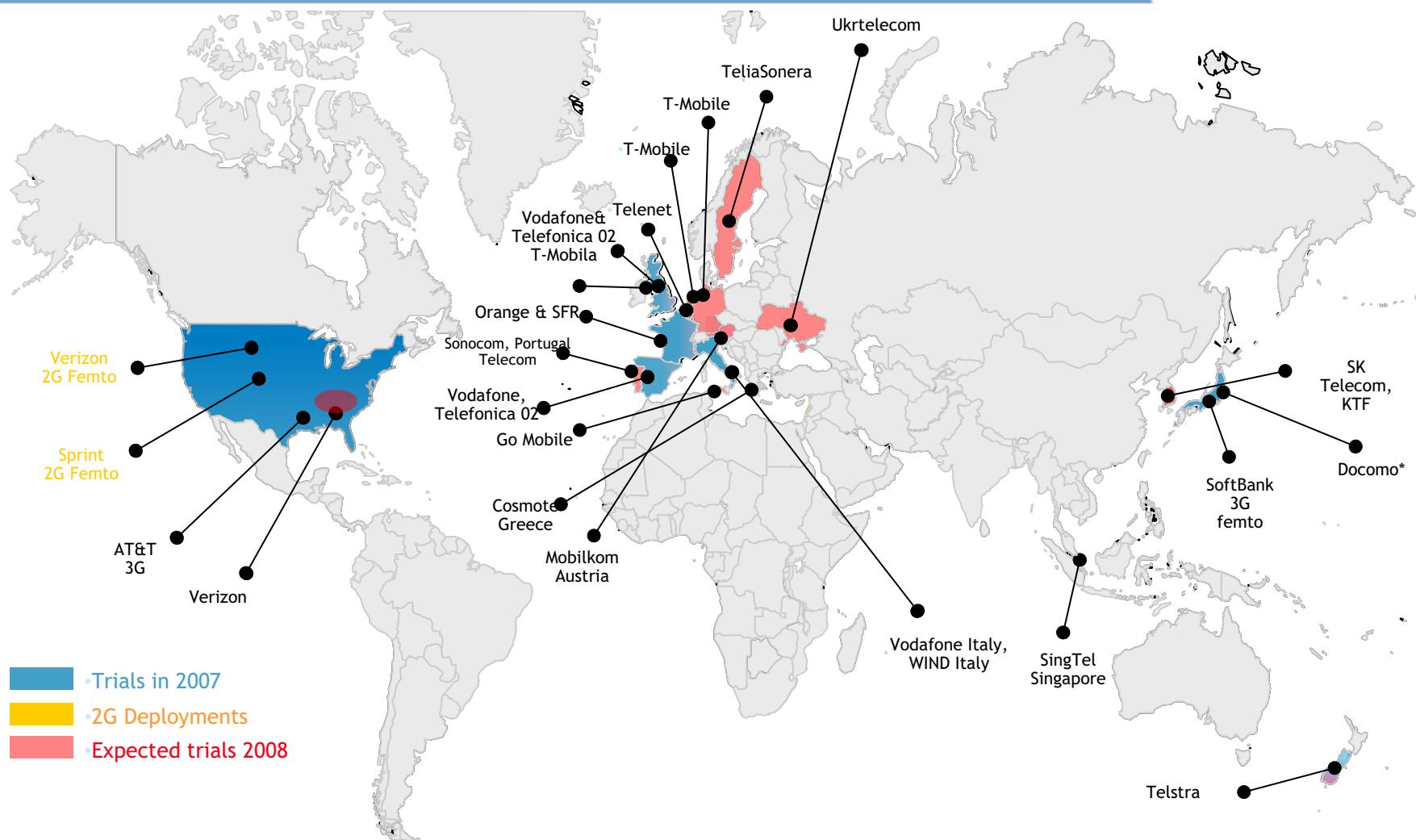
# Femto Component Vendors

## Femto Gateways



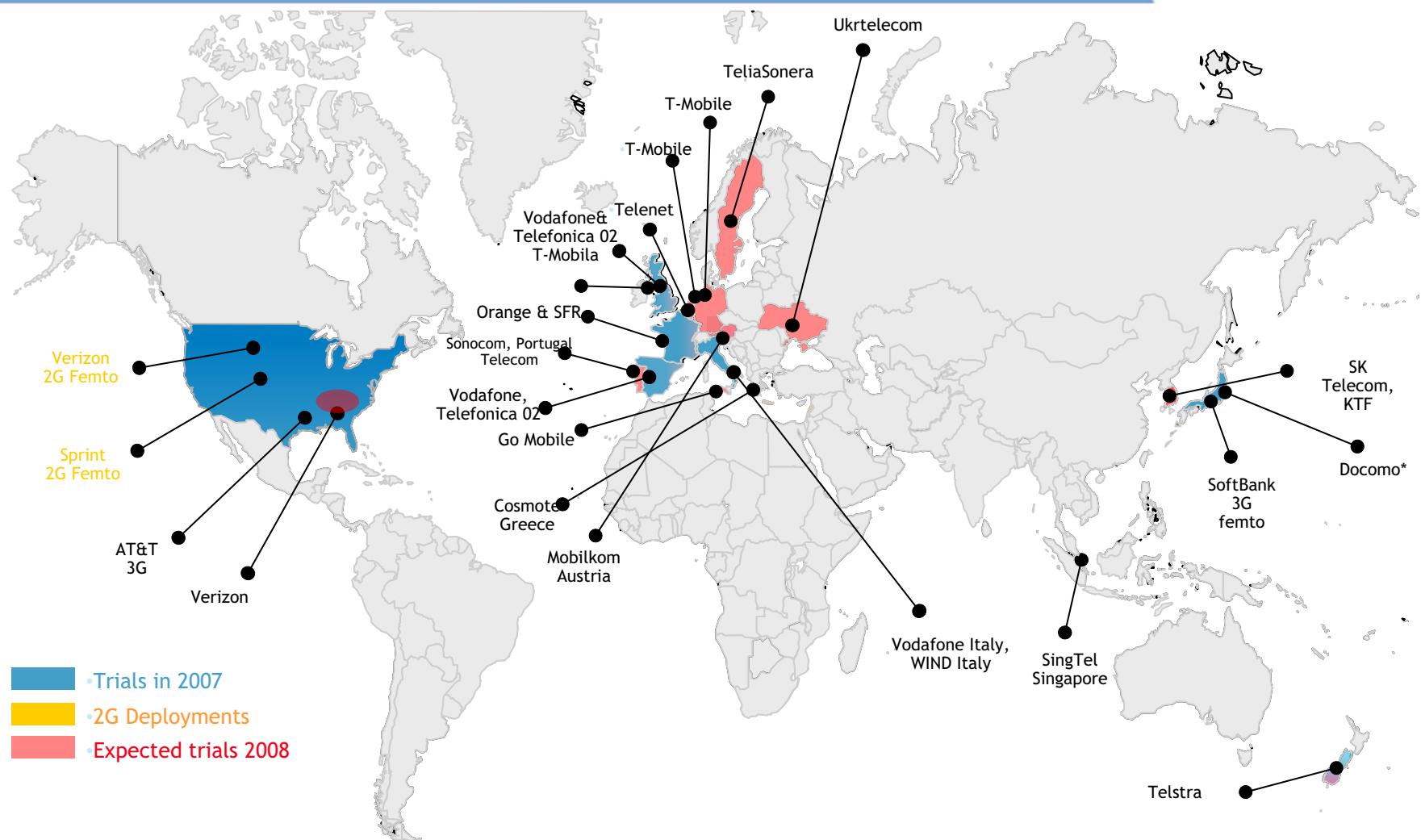
	Alcatel-Lucent	NEC	HUAWEI	Nokia Siemens Networks	ip.access	Nextpoint	Airvana
Product	BSG	Femtocell Gateway (Kineto Wireless)	Access Point Gateway (AG)	Femtocell Gateway	Oyster 3G Access Controller	ZTE Femto gateway	Airvana UAG
Availability	Q2 2008	Q1 2008	Q1 2008	Q3 2008	Q2 2008	Q1 2008	Q2 2008
Erlangs		n/a	15K/BH	n/a	5k	n/a	
Number of APs	64k BSR femtos	n/a	100K	n/a	20K	20k ubicells per RNC	160K
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Summary	Flexible dimensioning according to operators needs	UMA based gateway based on Kinetos UNC	Compact AG gateway High AP support	Very compact just one 19" rack		n/a	UAM based gateway. High number of APs supported

# Femtocell Activity by Operator



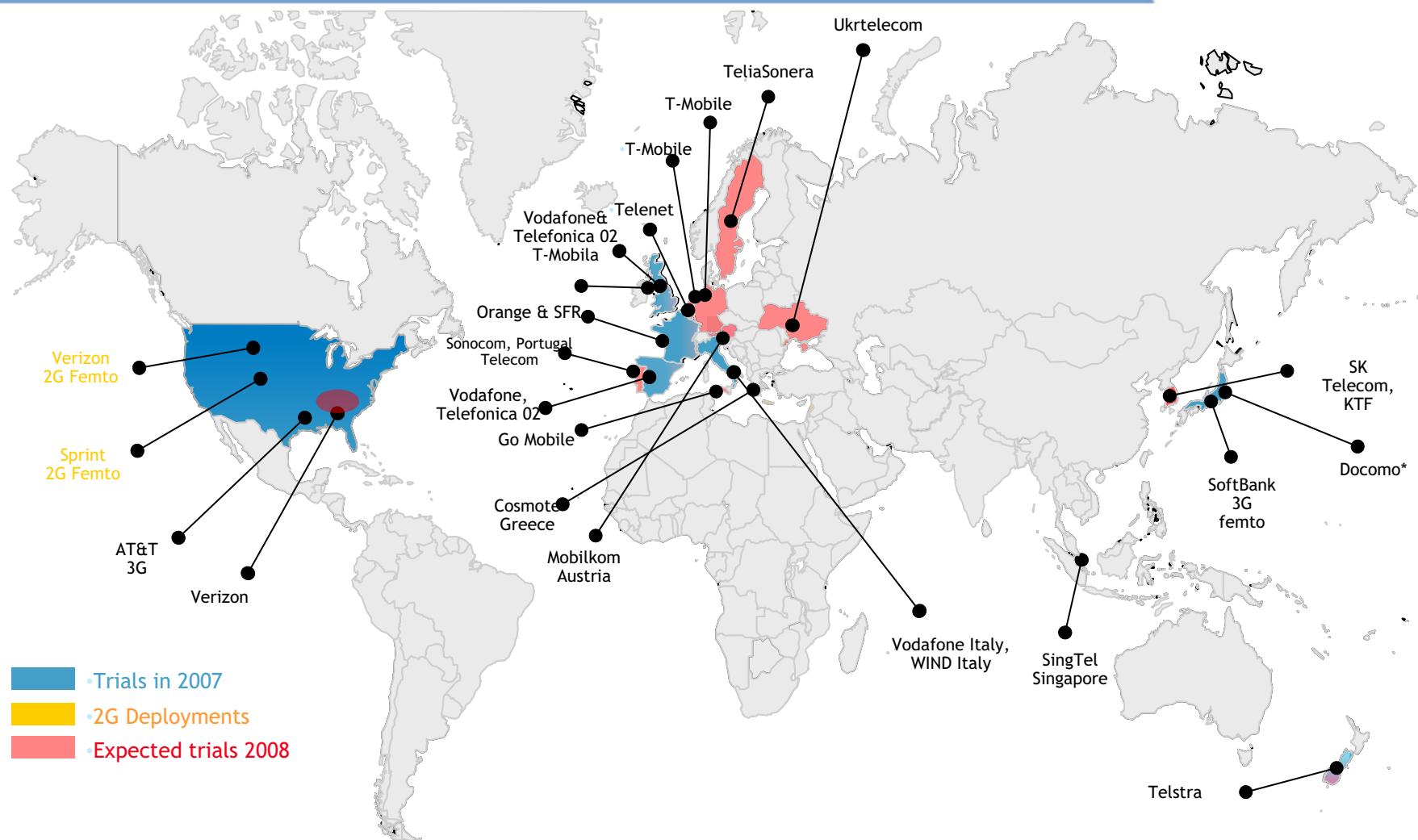
\* Docomo planning femtol cell with third party

# Femtocell Activity by Operator



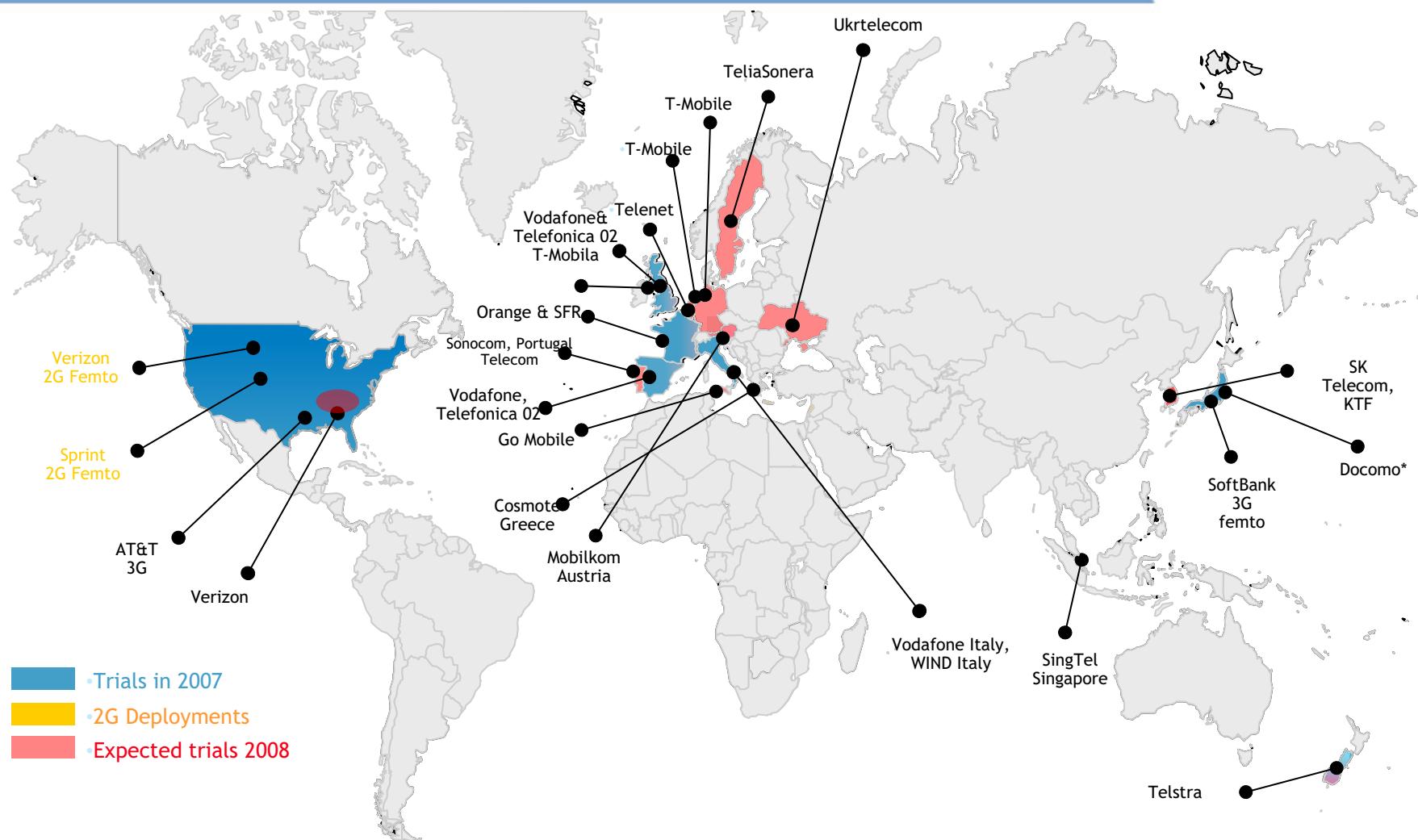
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# Femtocell Activity by Operator



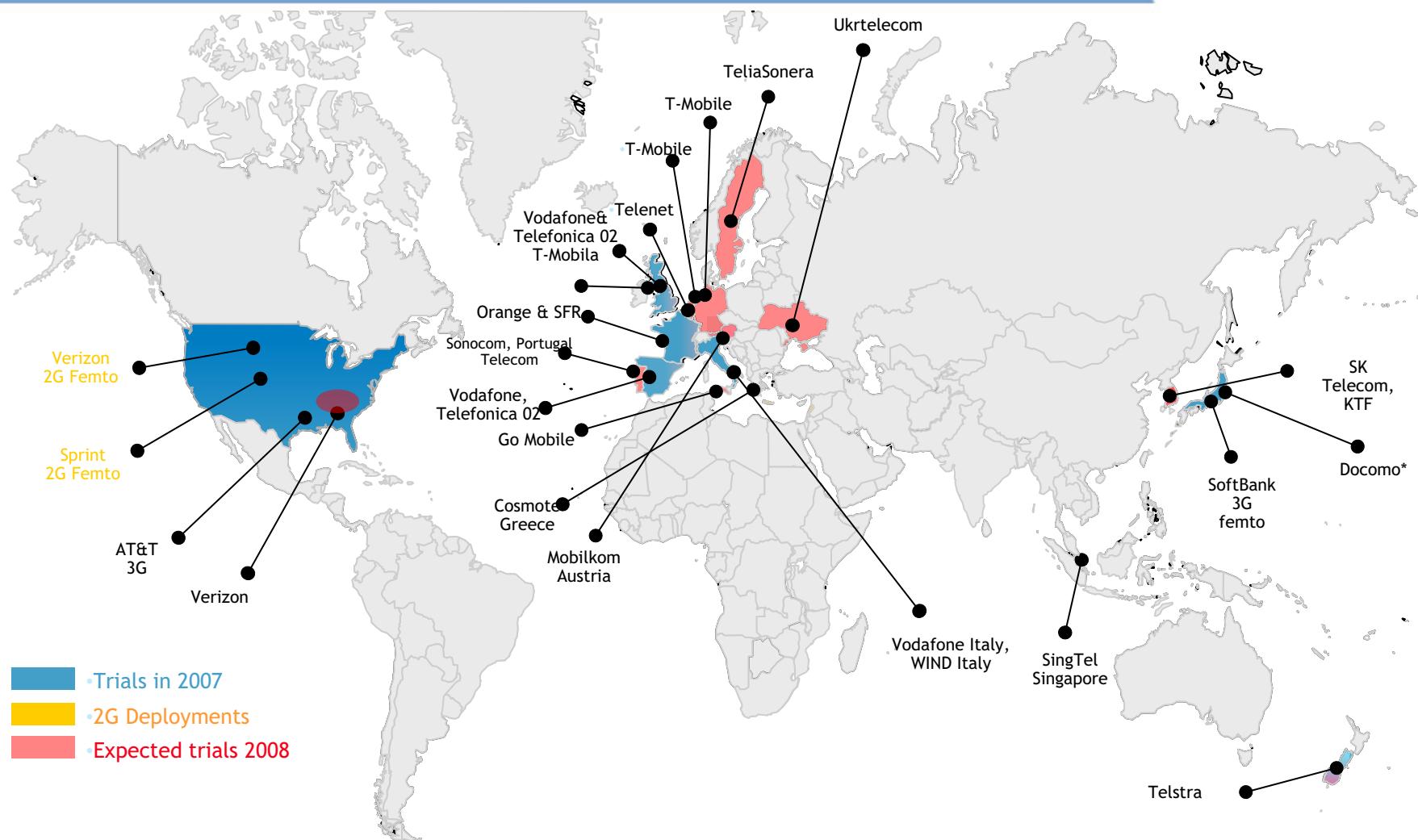
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# Femtocell Activity by Operator



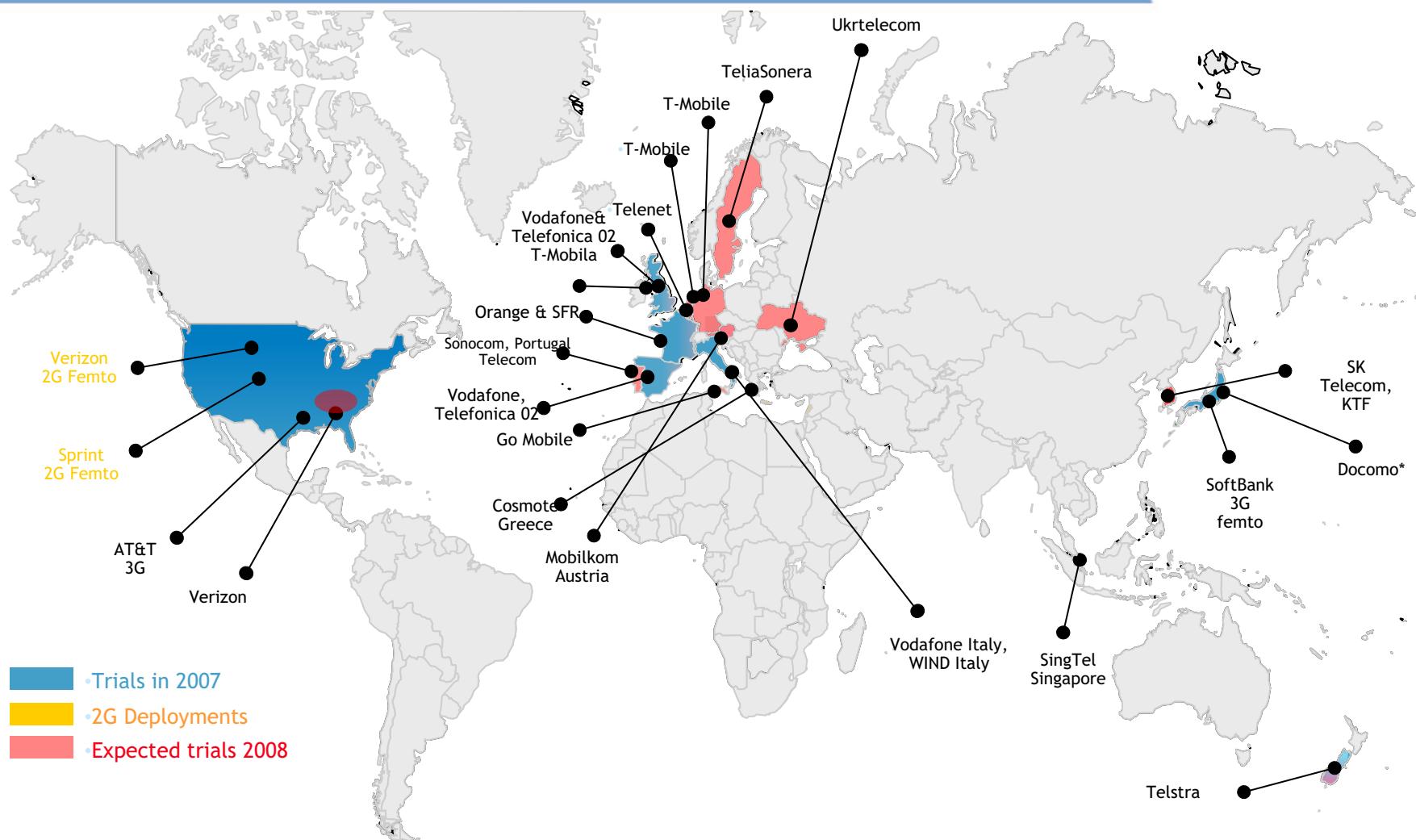
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# Femtocell Activity by Operator



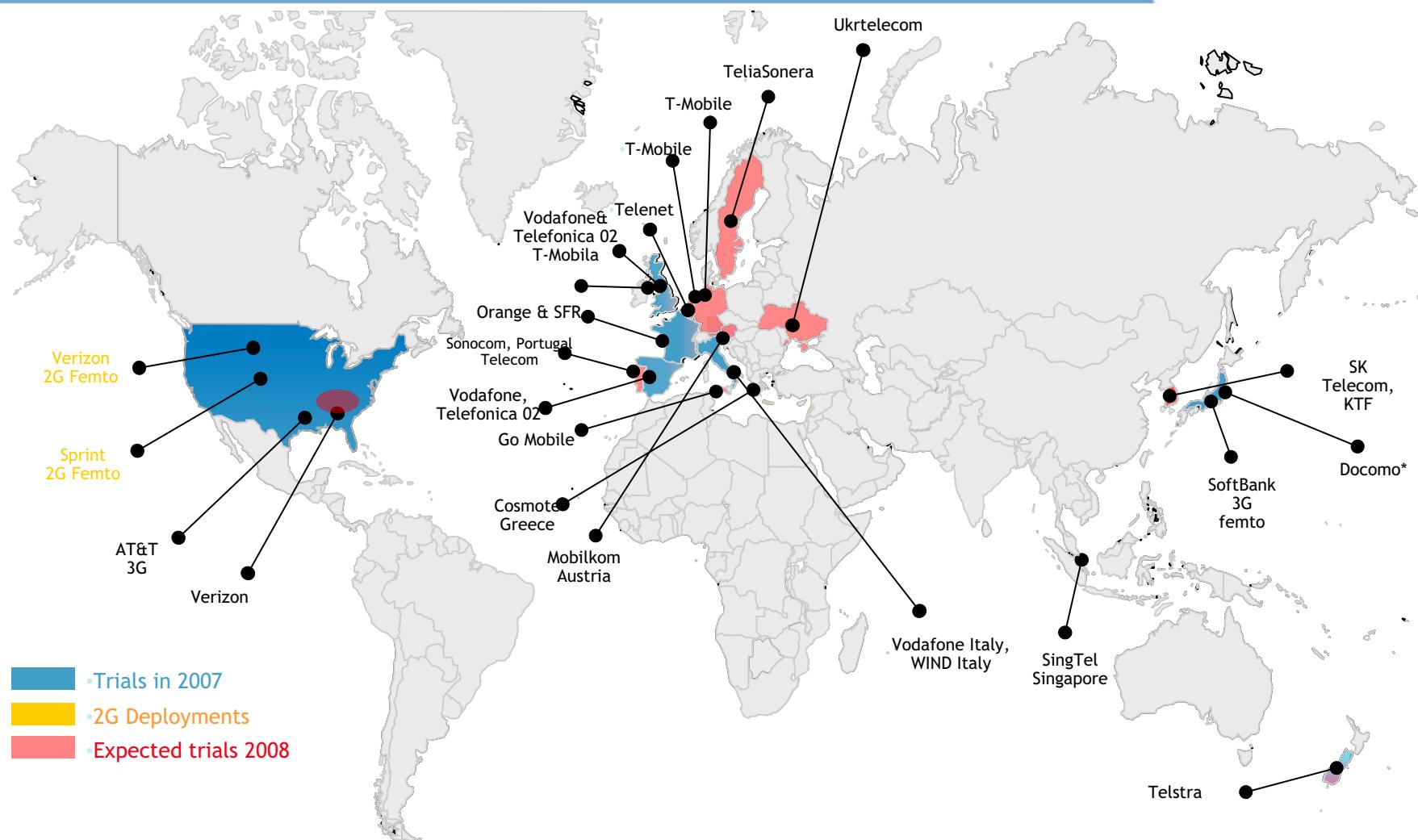
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# Femtocell Activity by Operator



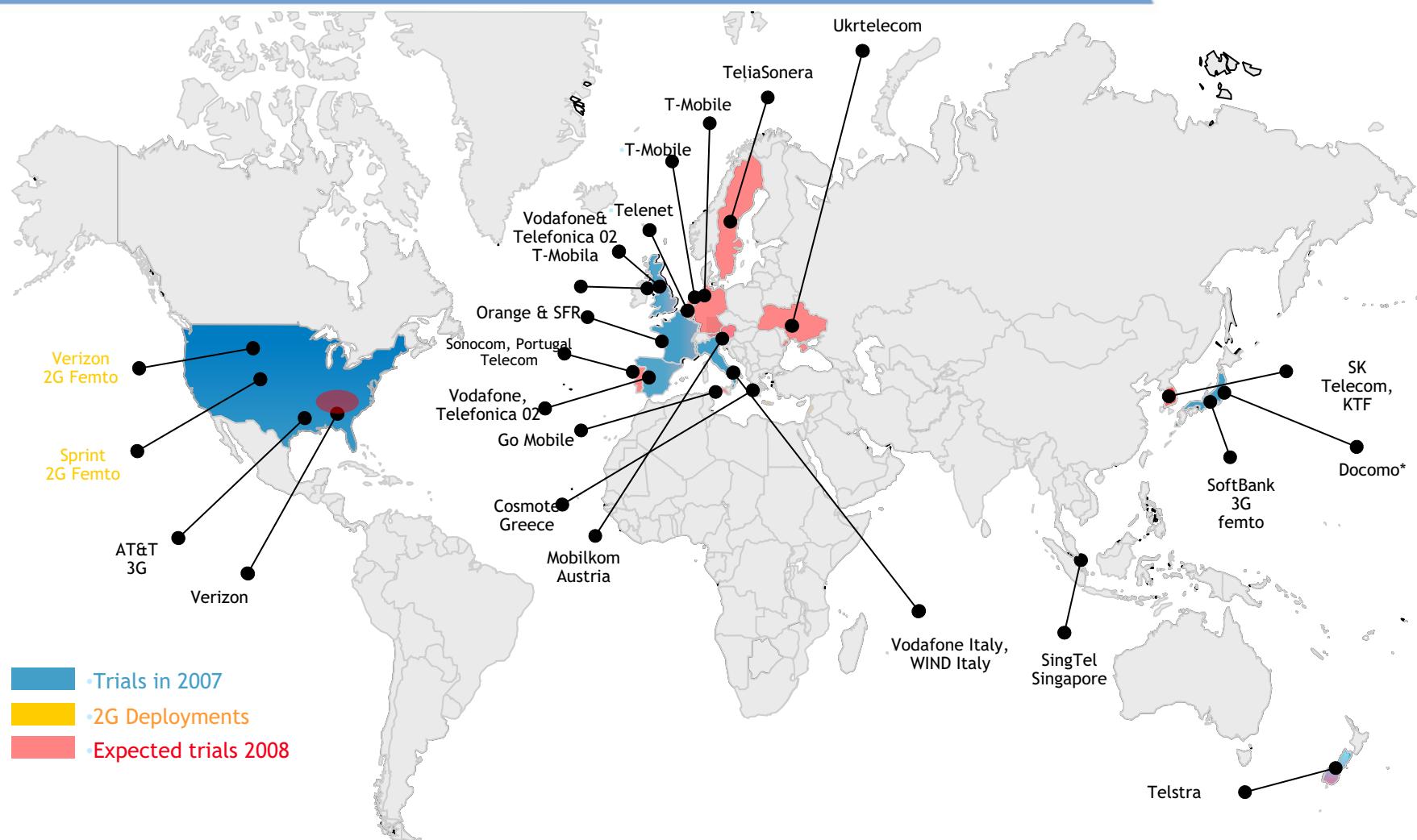
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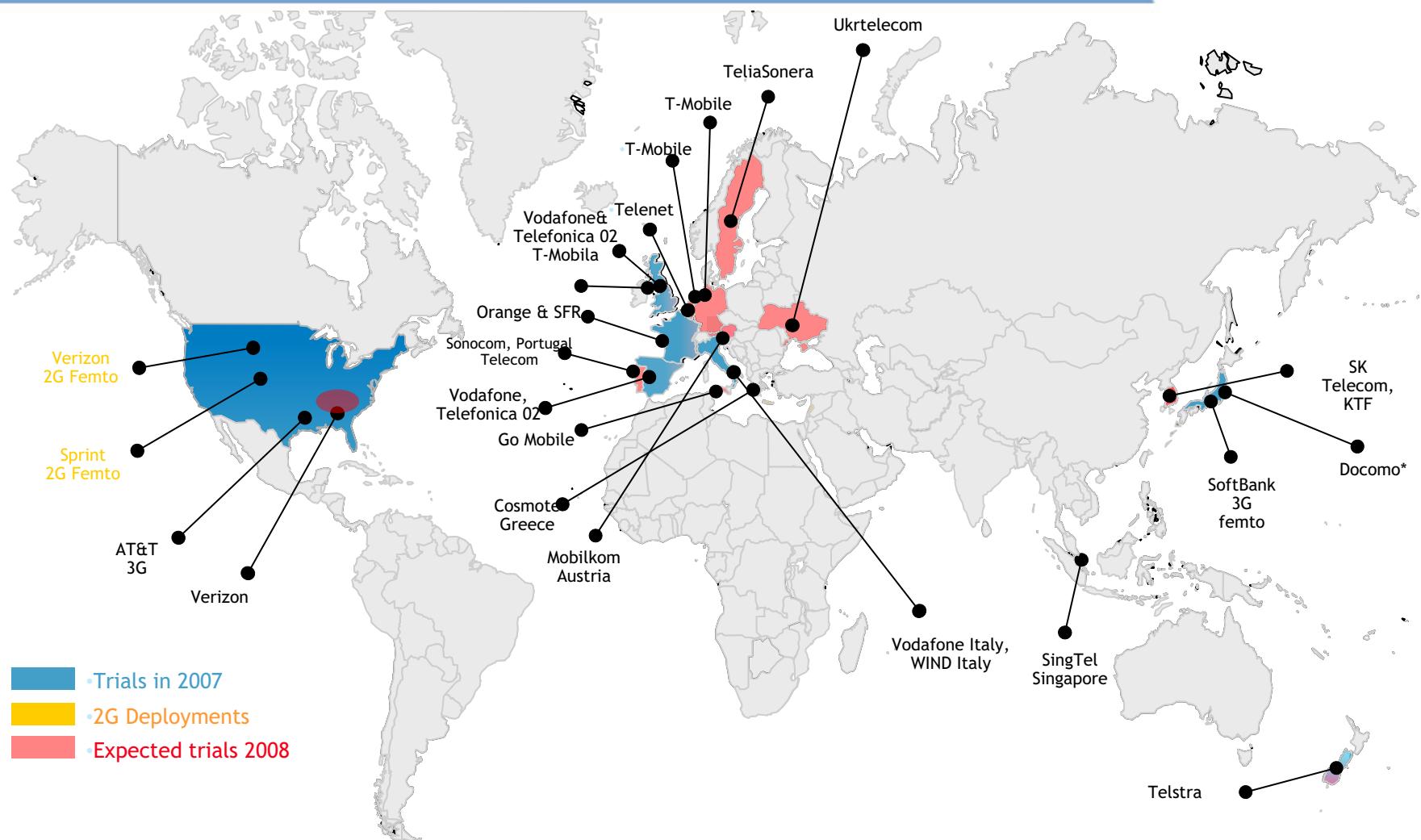
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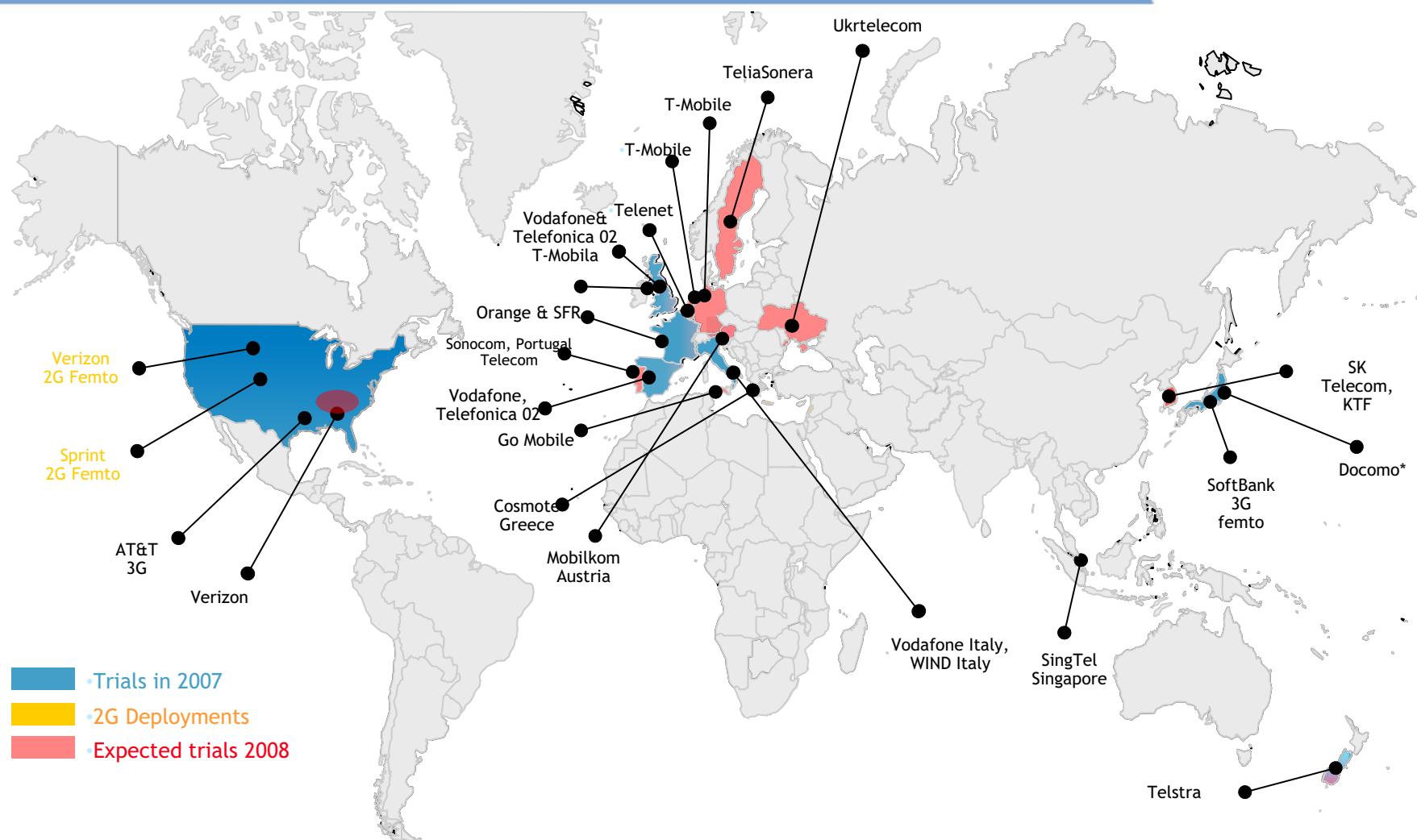
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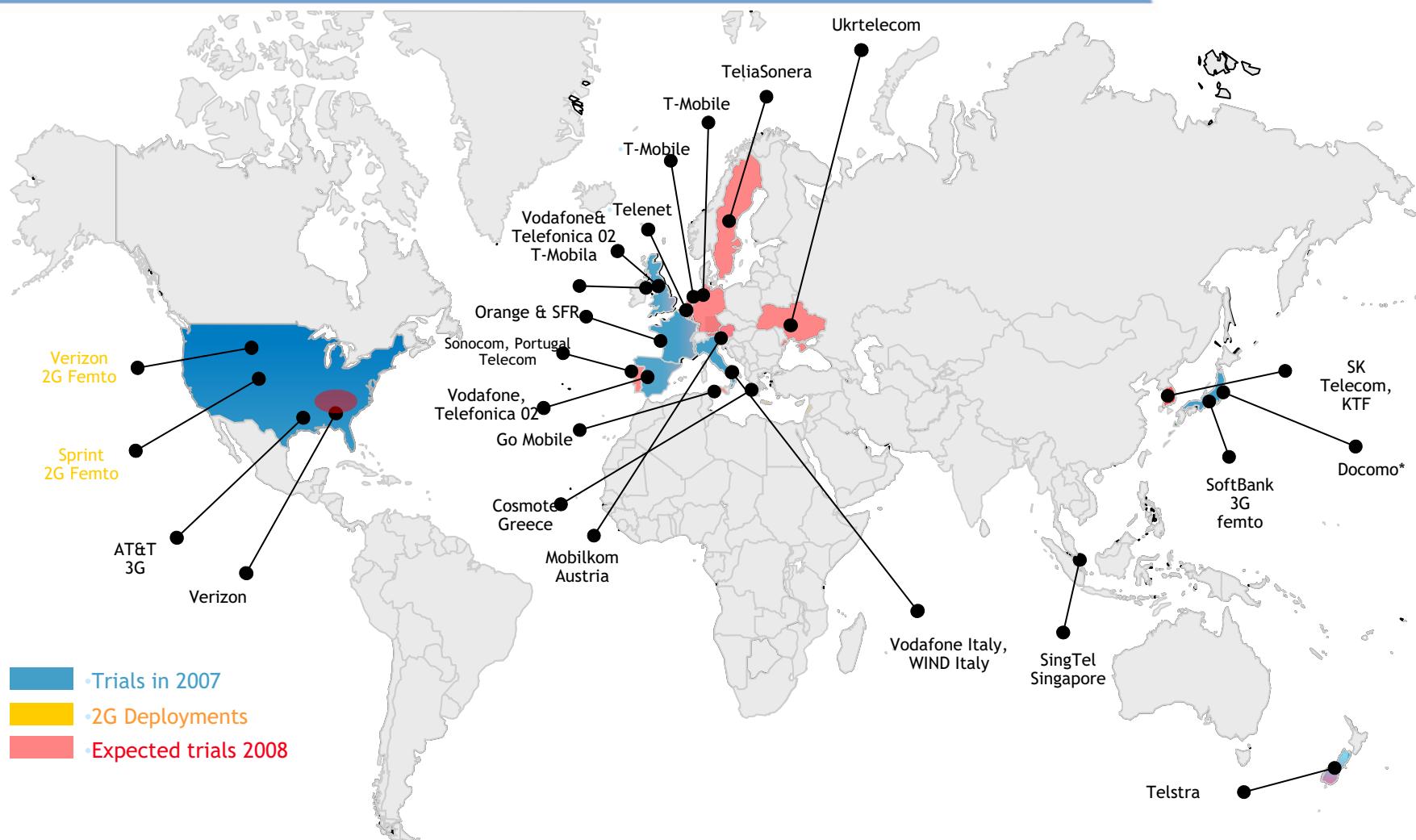
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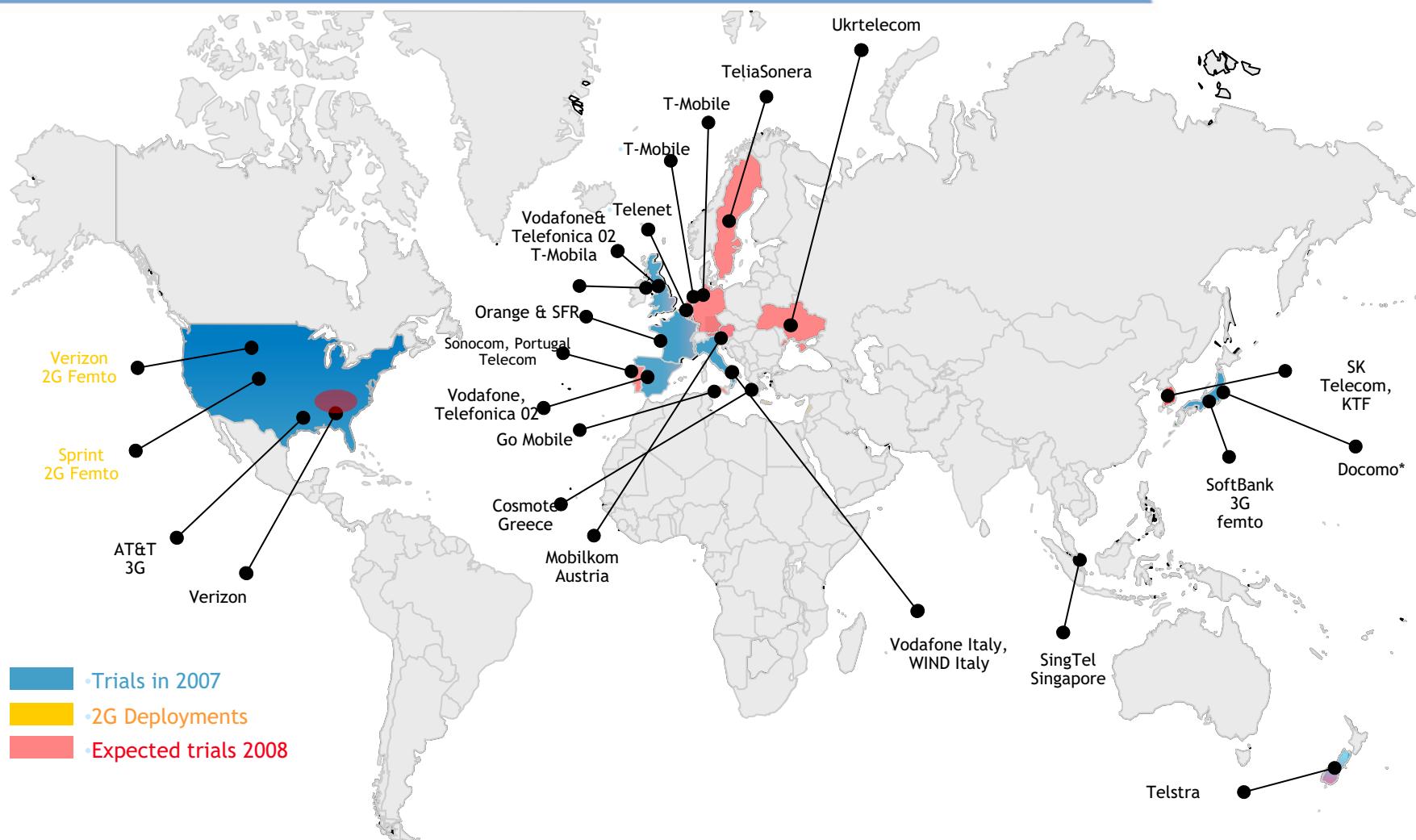
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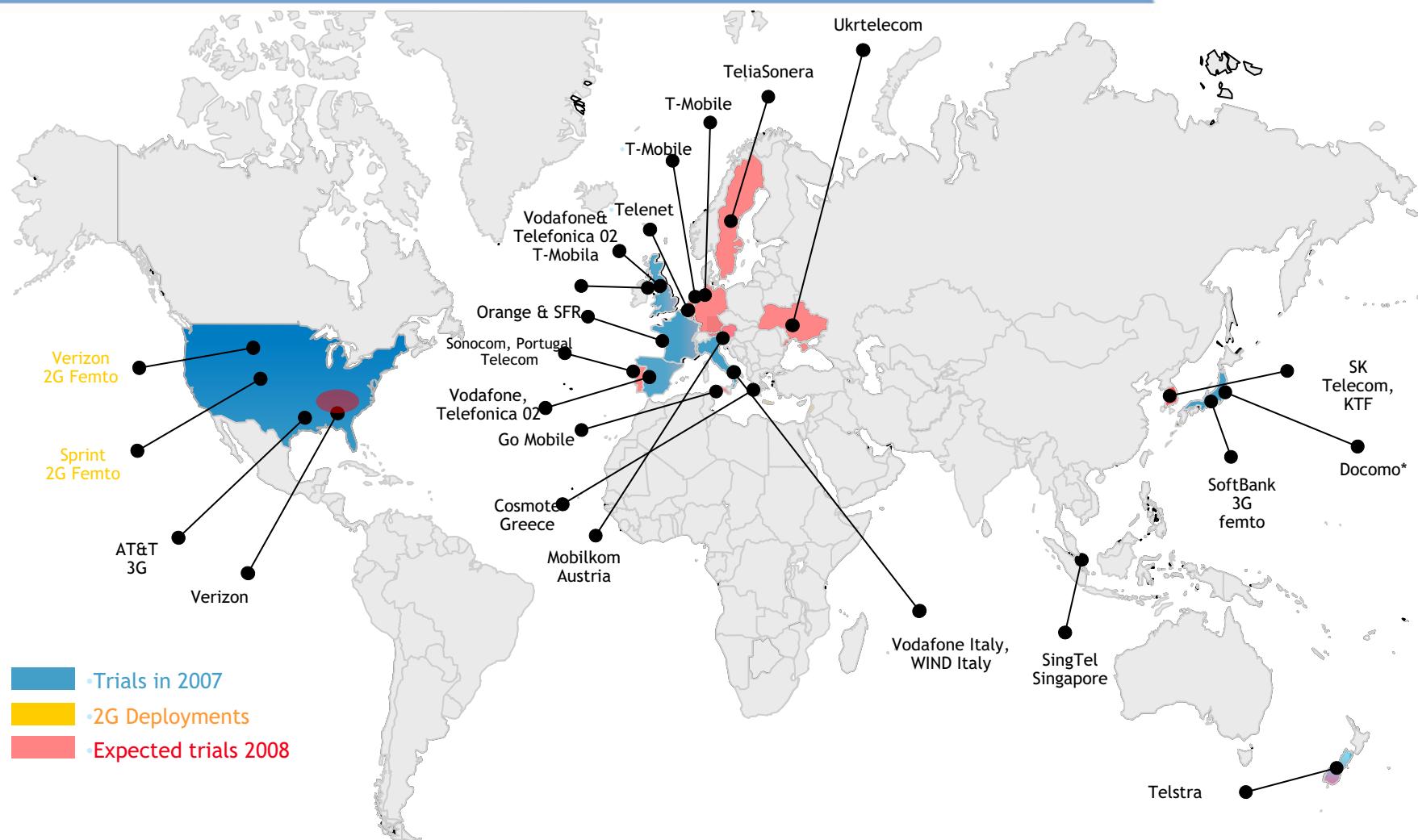
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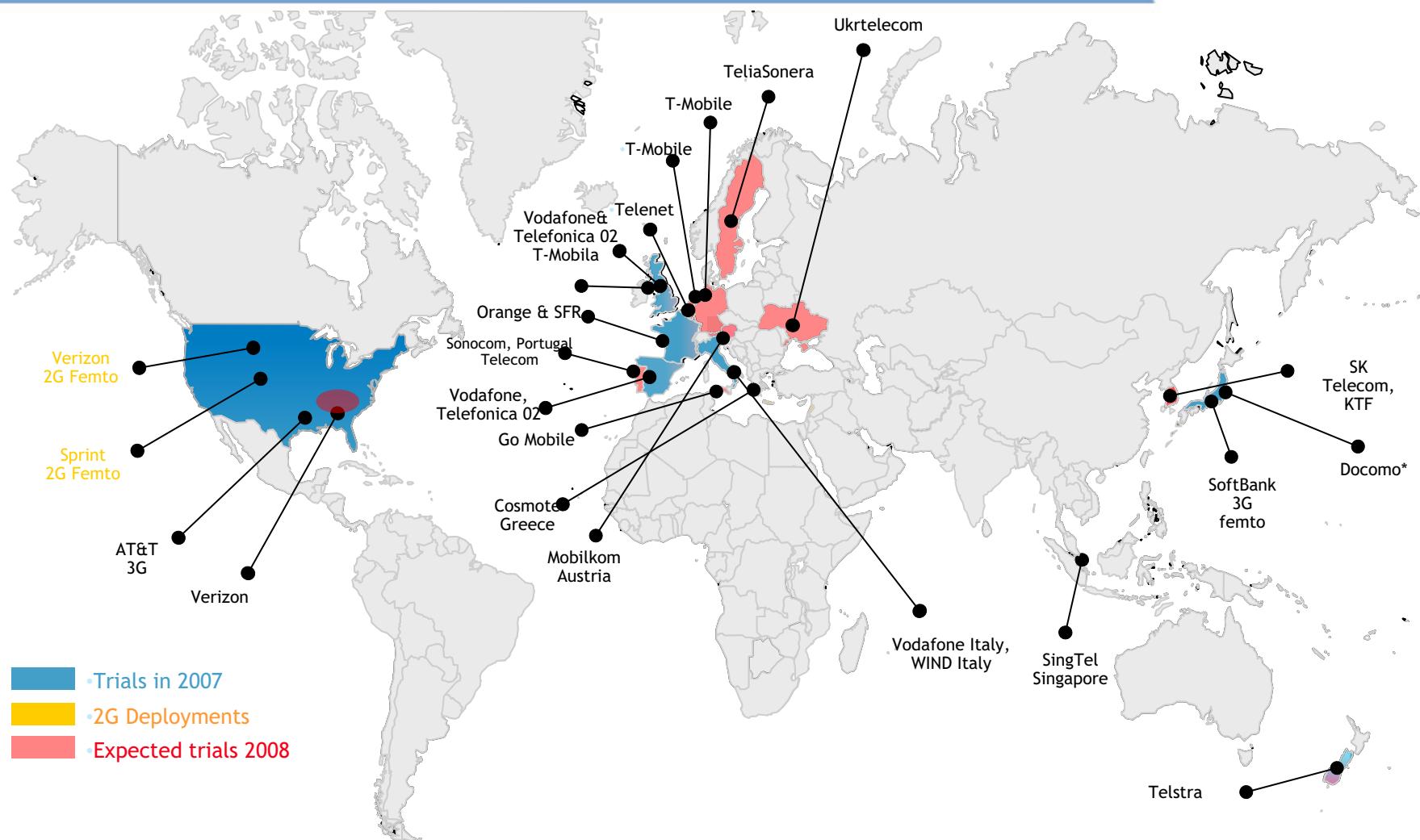
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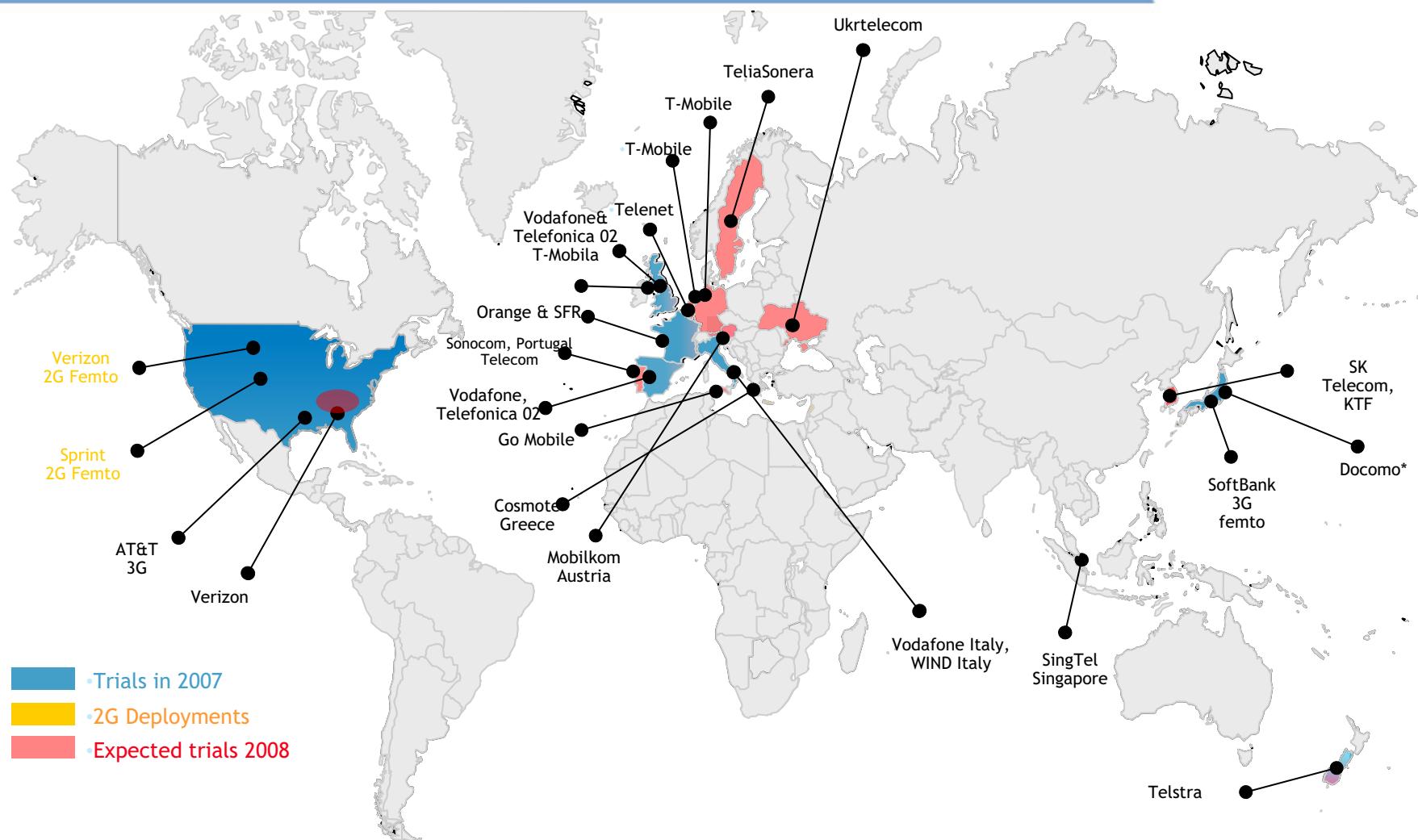
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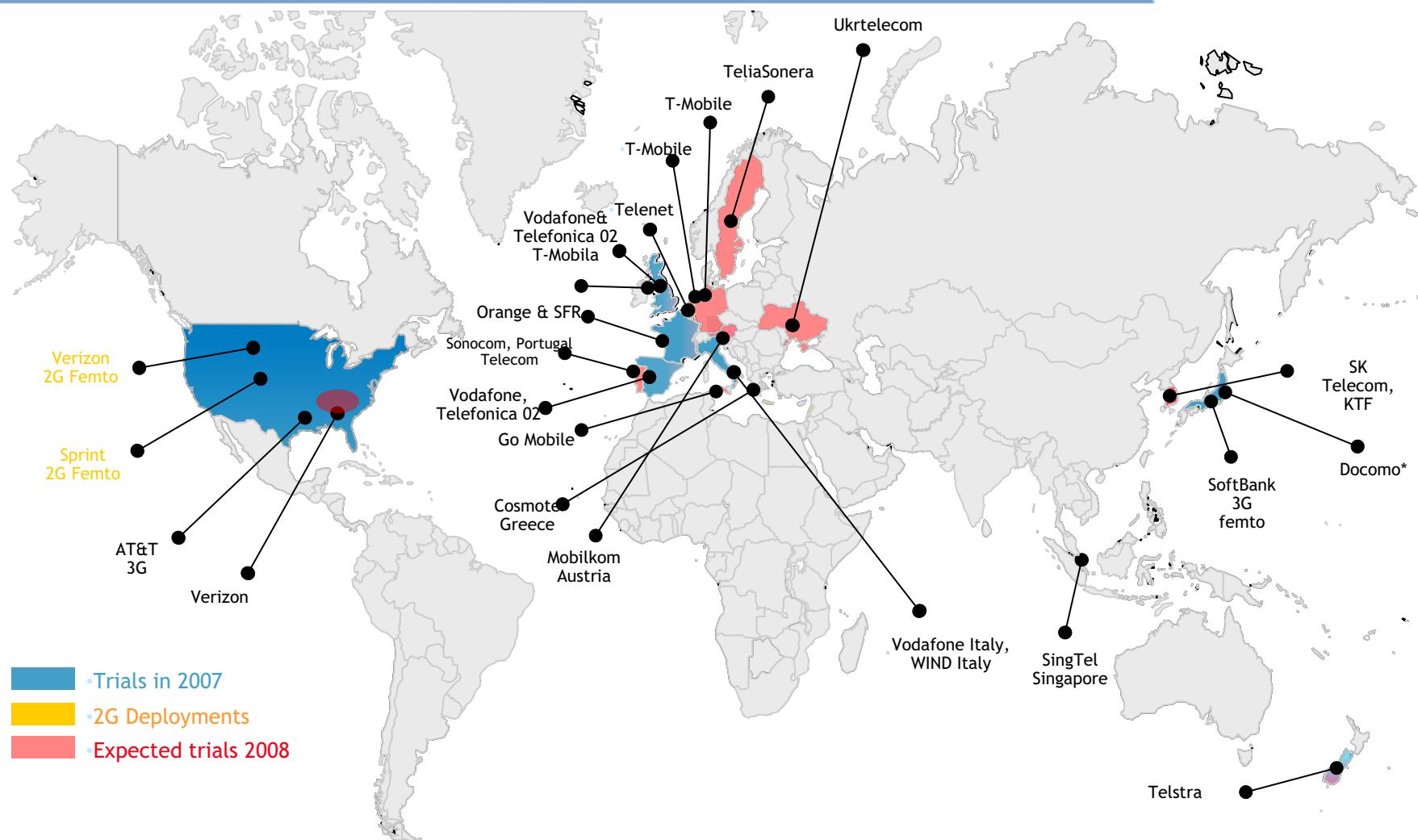
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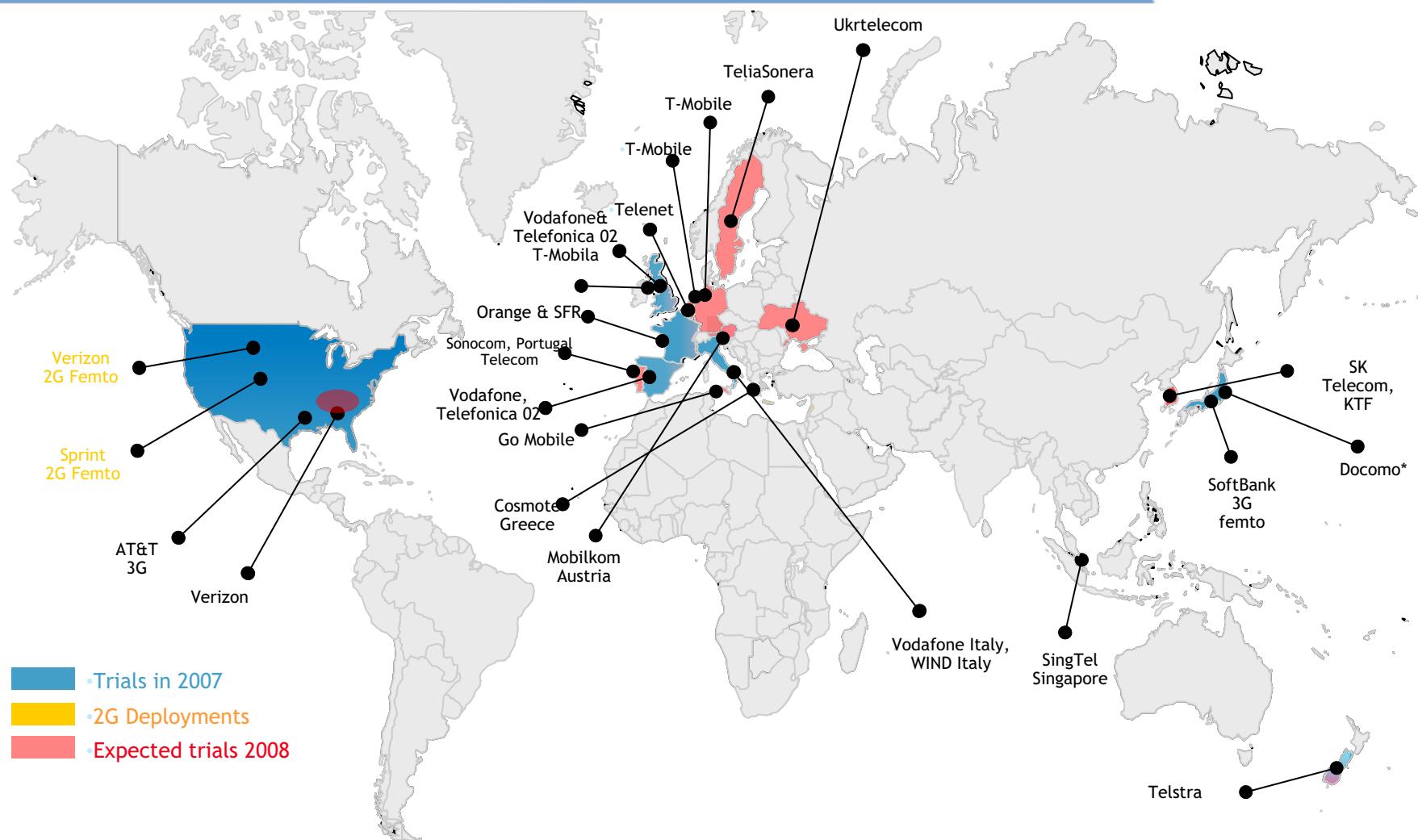
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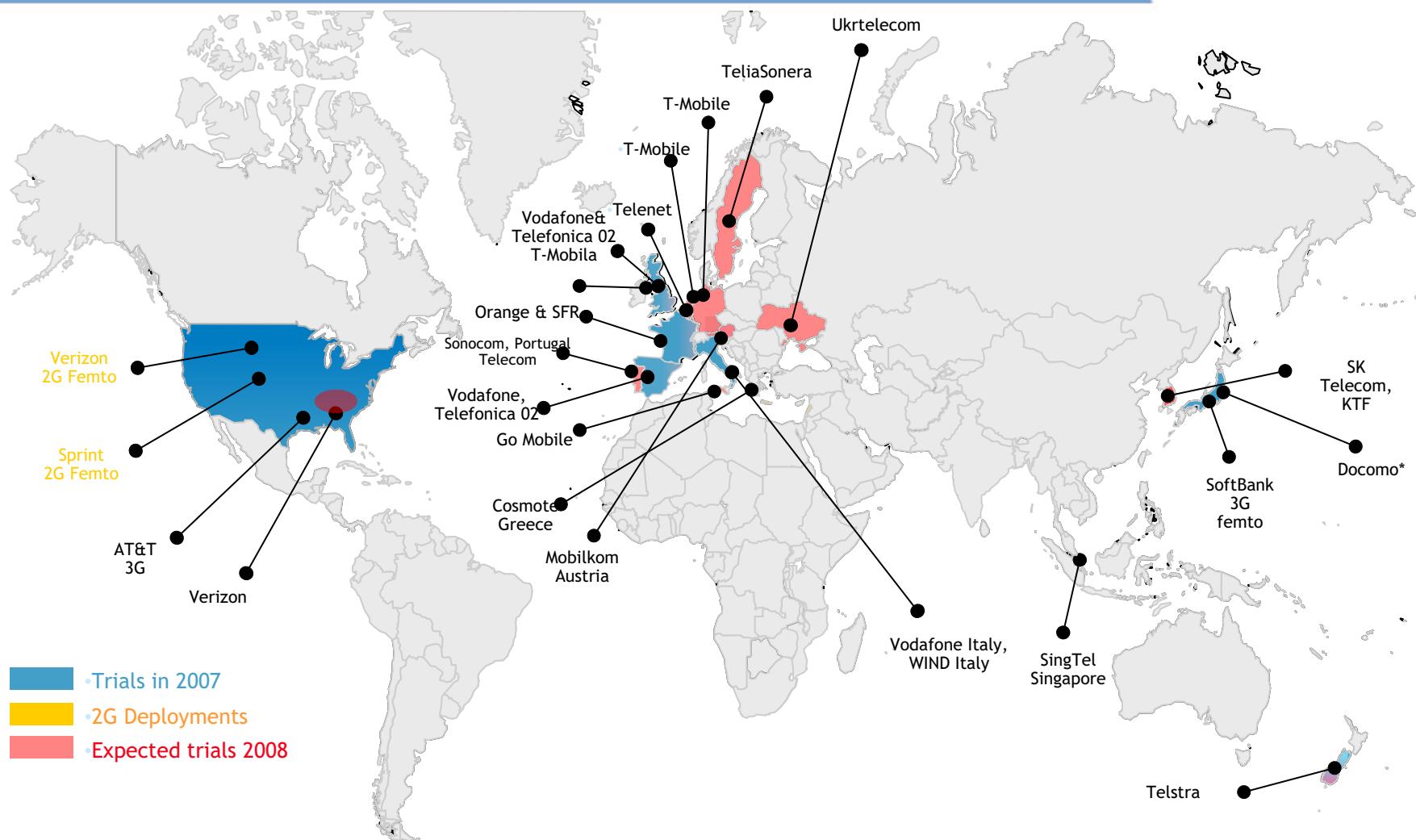
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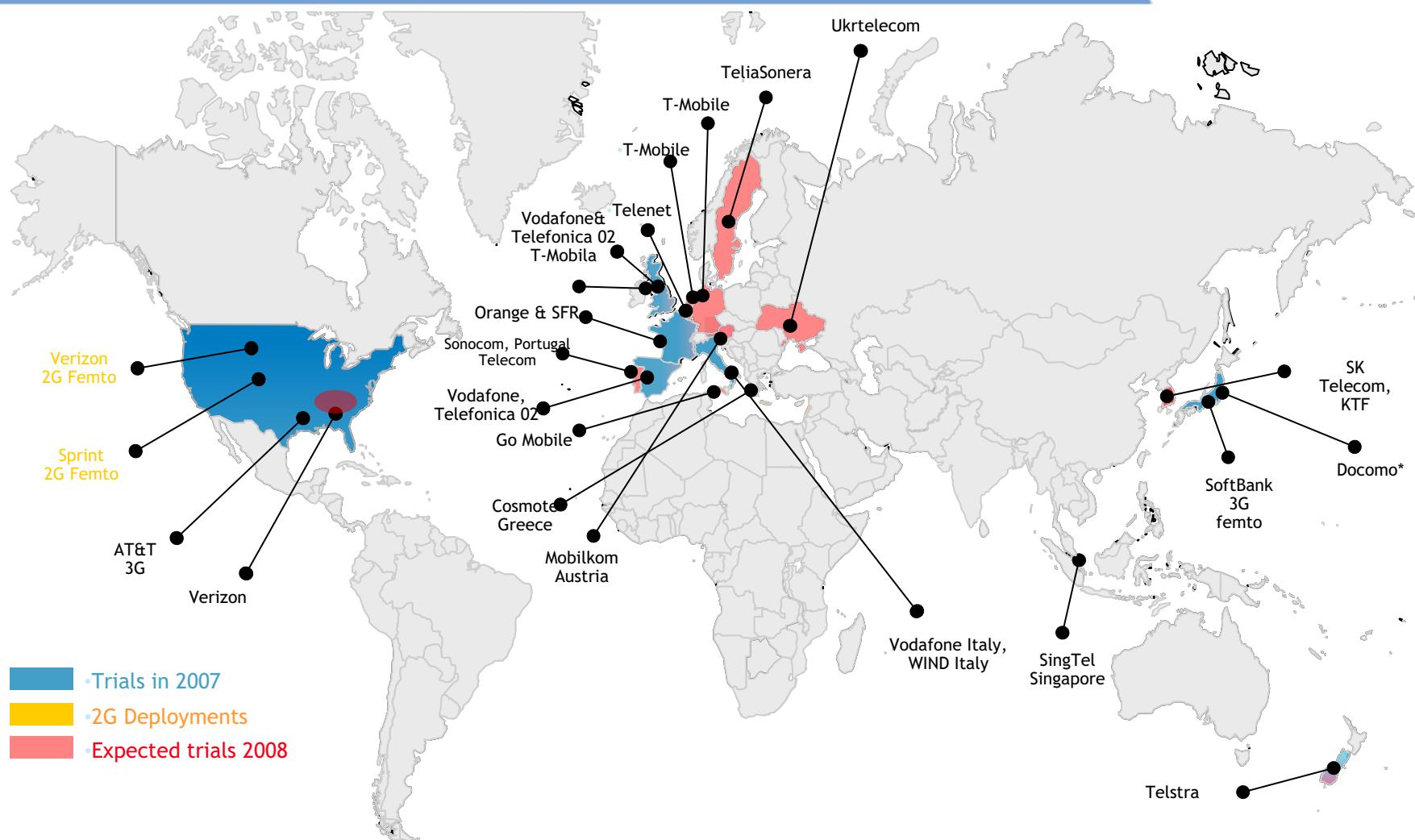
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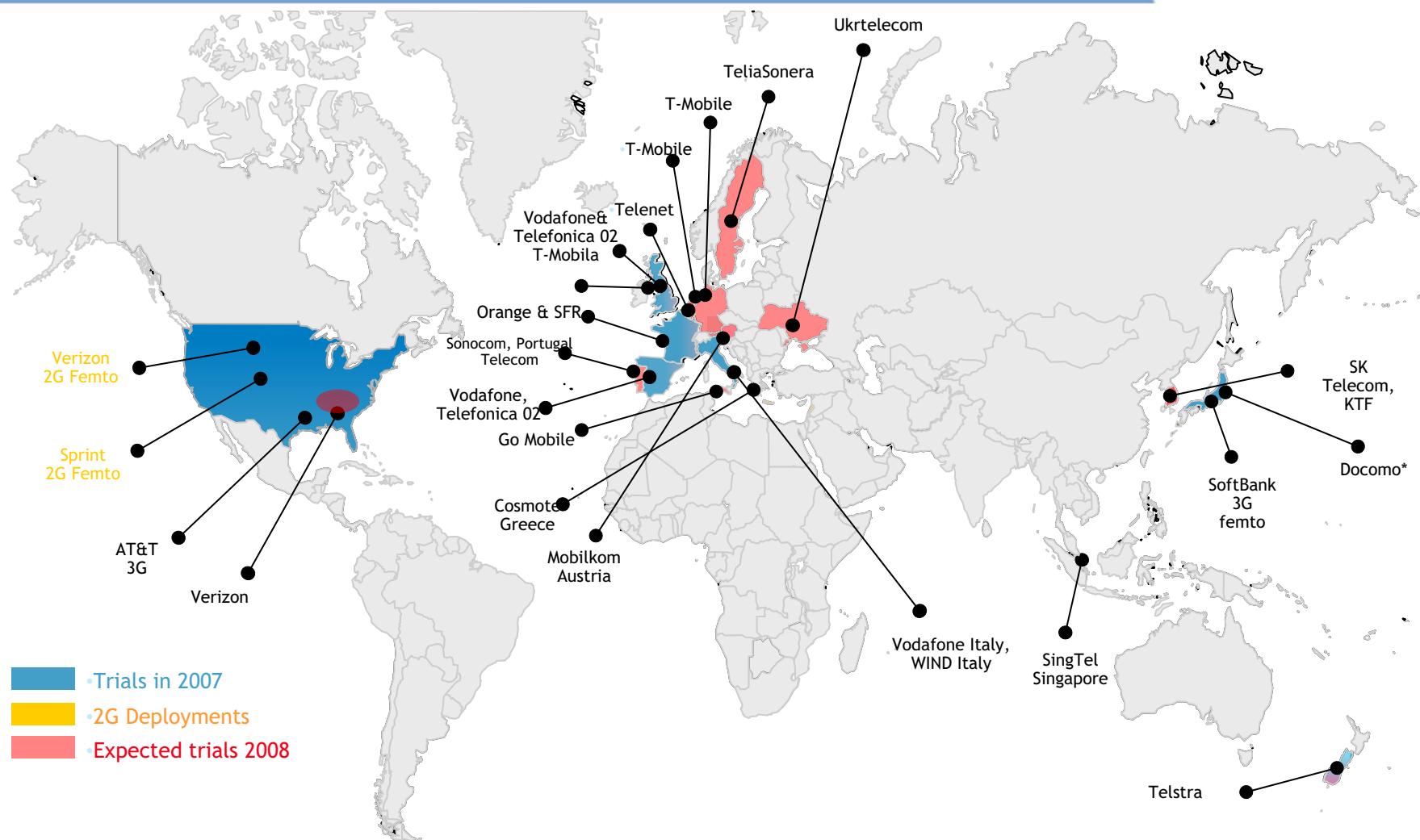
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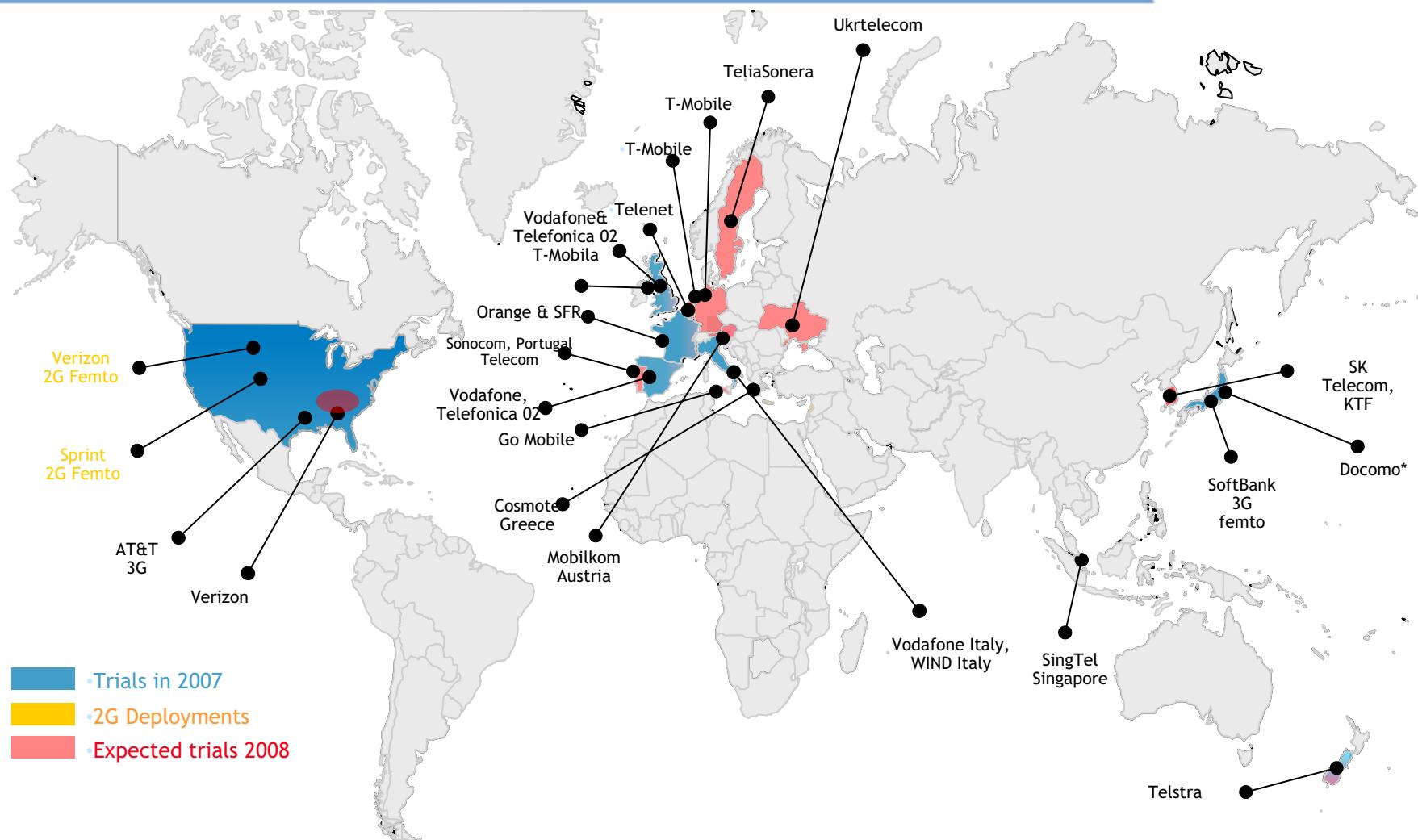
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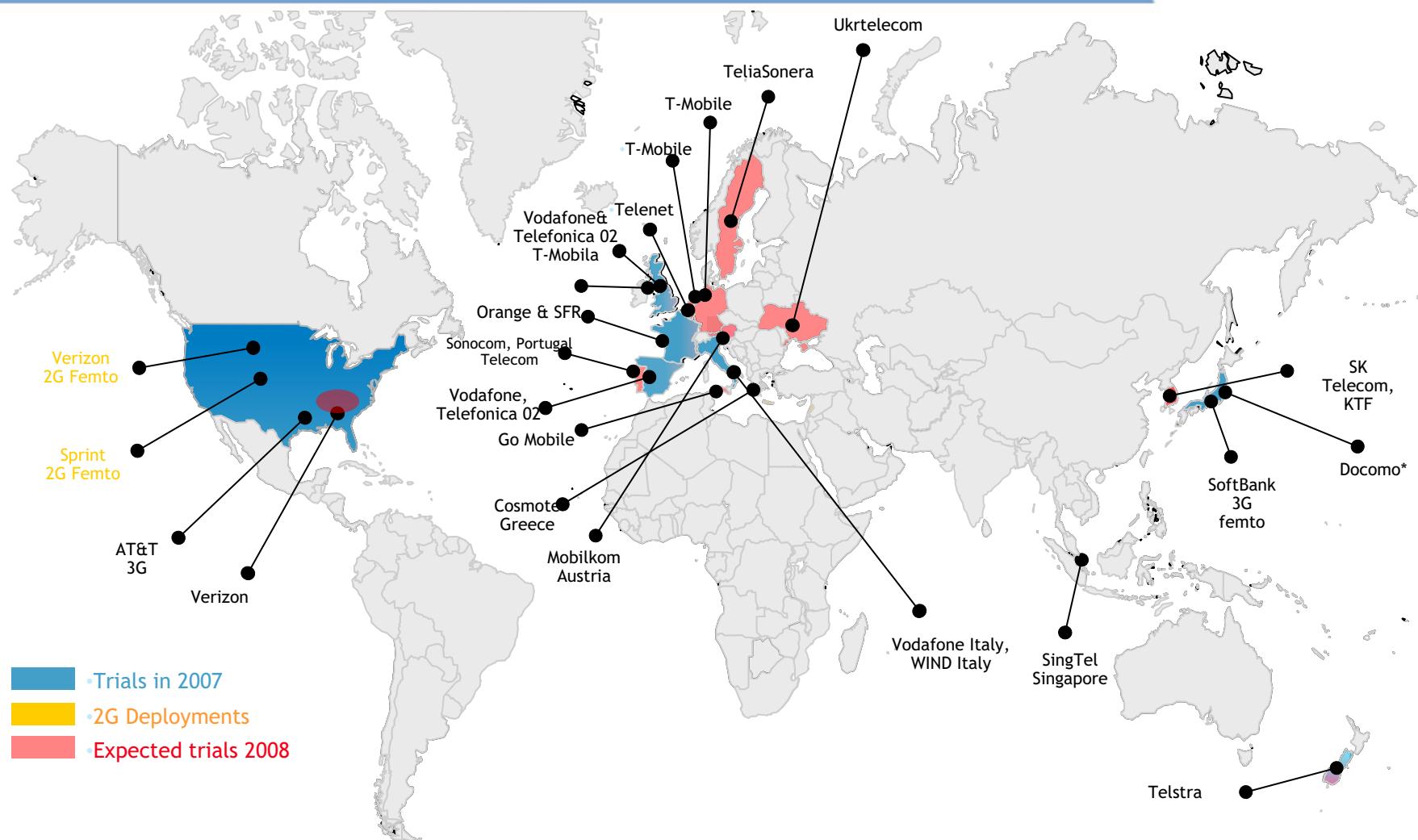
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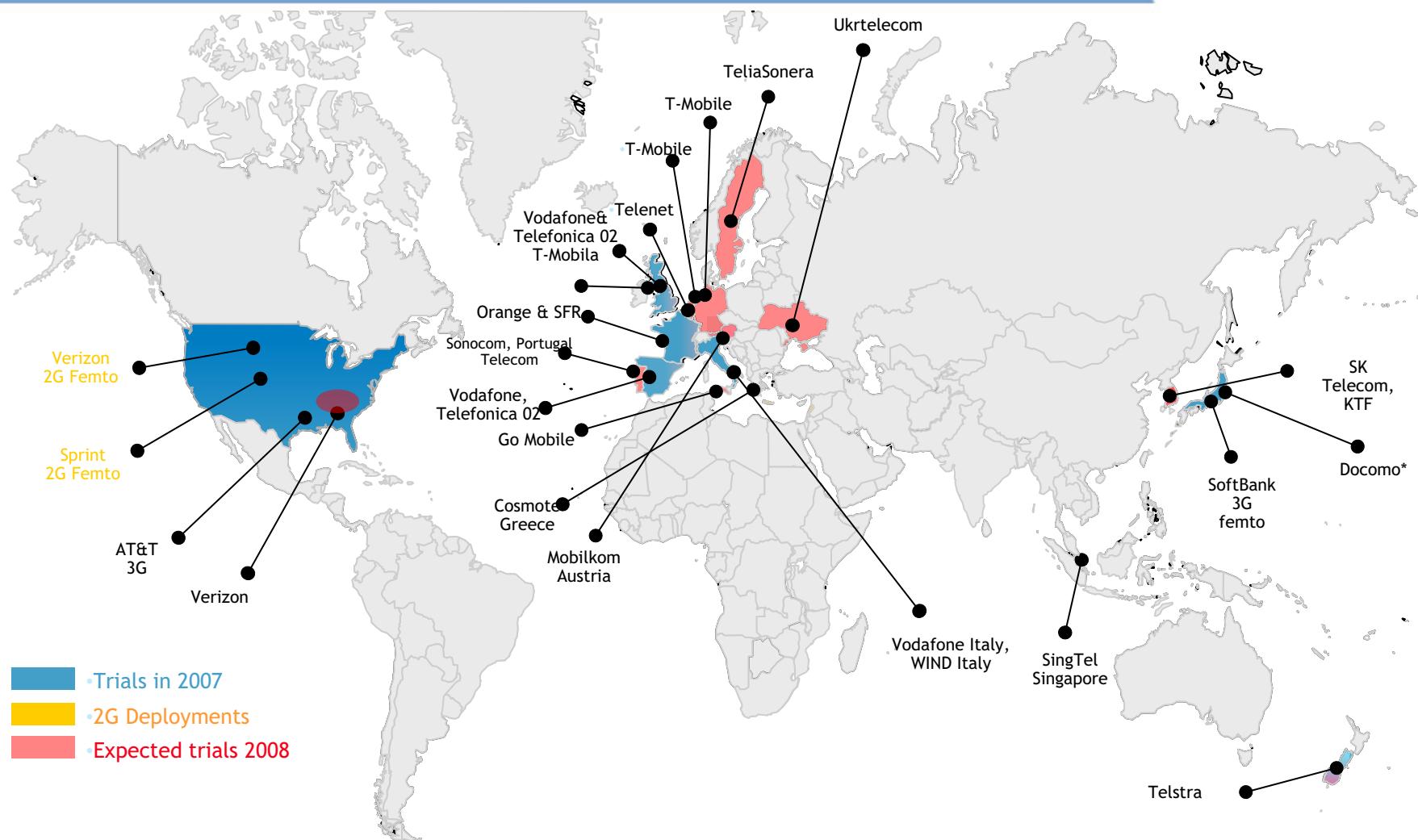
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# Femtocell Activity by Operator



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# Femtocell Activity by Operator



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# Femtocell Activity by Operator

Mobile Operator	Announced Date	Trial Date	Any Details	Solution Providers
AT&T (US)			Ongoing trial 1900MHz (2007) Signed deal with ip.access in Apr-08 for potential 7 million femtocells	Cisco/ip.access and NSN/Airvana
CHT (Taiwan)	Q2 2008	Q2 2009	RFP July 2008	
Comcast	June 2008		Exploring	
HSL (UK)	Jan 2008	Q4-2008	2.75G Femto	
KTF (S. Korea)			Q2 2008	ALU (April 2008)
KPN			Remote Trial planned Q2 08	
Mobilkom (Austria)				ALU
O2 UK	Feb 2008	Early 2009	Start trials in April 2008 and if successful will be extended to 500 users across UK in the summer. Names Vivek Dev COO Telefonica O2. Name: John Carvelho (Head of Core Network Innovations).	NEC (Kineto, Ubiquisys) ZTE
O2 – Manx			Remote Trial planned Q2 08	
O2 – Czech Republic				
Orange			Currently concentrated on the Enterprise Femto. Short listed with 4 others following the Enterprise RFP, negotiation ongoing	RFP: Huawei, ZTE, ALU, and NSN or Motorola
Orascom			Multiple countries	Selected Ip.access
Partner			Remote Demo – connection to core network in Nuremberg	
SFR (France)			Planning trial Q1 2008	ALU Q1 2008 Ongoing with Motorola/Ubiquisys, NSN? RFQ: Ubiquisys, Ip.access, NSN, Huawei, ALU
SingTel			Trial requested, expected in 2H08	TE is completing now a 2G Femto 3G Femto trial in Q1 2008

# Femtocell Activity by

Mobile Operator	Announced Date	Trial Date	Any Details	Solution Providers
SKT (S. Korea)	Nov 2007	Q2 2008	WCDMA trial only	Huawei
StarHub			6 month market assessment trial since May 2008 with 200 subscribers. Name: Anil Nihalani, Head of Mobile Services	Huawei and ZTE
SoftBank		Q4 2007	In March 2008 Junichi Miyakawa (CTO Softbank) said commercial trial in May and mass deployment in October.	NEC and Ubiquisys (e-auction) Evaluating: Ubiquisys or ALU
TeliaSonera Denmark	Feb 2008	2Q 2008		ALU
TeliaSonera Lithuania	Feb 2008	2Q 2008		Motorola (Kineto and Ubiquisys)
Telstra (New Zealand)			Trial planned April 08	Lab trial ongoing with Huawei & Ericsson (2G)
Telenet (Belgium)			Connection to remote system requested (scheduled Q2 08)	
TMO – Germany	Feb 21, 2008	Q2 2008		Phase 1 evaluation Huawei RFQ issued in Q2-08.
TMO – Netherlands	Feb 21, 2008	Q2 2008		Phase 1 evaluation ip.access
TMO – UK	Feb 21, 2008	Q2 2008	Name: Emin Gurdeleni (Technology Director at T-Mobile UK )	Phase 1 evaluation ip.access
TMO – USA	Jun 2008	July 2 2008	T-Mobile @Home with HiPort router.	



# Femtocell Activity by Operator

Mobile Operator	Announced Date	Trial Date	Any Details	Solution Providers
Telecom Italia				ALU: studying remote demo or Proof of Concept in ALU premises. Trial with Huawei and another vendor ip.access or NSN?
Telefonica de España			On going	Ongoing Trial with ALU and Huawei
Verizon	April 2008	In 2008?		
Vodafone Italy				Ip.access
Vodafone Ireland				Ip.access
Vodafone Portugal				Ip.access
Vodafone Spain	Jan 2008	1Q 2008	Ongoing. Name: Andy MacLeod (Dir Global Networks)	ALU, Huawei ip.access/Thomson/Cisco
Vodafone UK				Ip.access
Wind (Italy)			Trial requested for March 08.	ALU Business Case submitted Q&A ongoing

# Femtocell Activity by Operator

Mobile Operator	Announced Date	Trial Date	Any Details	Solution Providers
Telecom Italia				ALU: studying remote demo or Proof of Concept in ALU premises. Trial with Huawei and another vendor ip.access or NSN?
Telefonica de España			On going	Ongoing Trial with ALU and Huawei
Verizon	April 2008	In 2008?		
Vodafone Italy				Ip.access
Vodafone Ireland				Ip.access
Vodafone Portugal				Ip.access
Vodafone Spain	Jan 2008	1Q 2008	Ongoing. Name: Andy MacLeod (Dir Global Networks)	ALU, Huawei ip.access/Thomson/Cisco
Vodafone UK				Ip.access
Wind (Italy)			Trial requested for March 08.	ALU Business Case submitted Q&A ongoing

# Femtocell Activity by Operator

Mobile Operator	Announced Date	Trial Date	Any Details	Solution Providers
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Name: Bob Smith

DATE OF BIRTH: 12/11/1978

EMAIL\_ADDRESS: bsmith@work.com

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PHONE Number: 702-919-1300

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