FleXtel Ltd, FleXtel House, The Commons, Sandbach, Cheshire, CW11 1EG, England
Sales: 0870 321 1000 Support: 0870 3210 100
Internet: www.flextel.com Email: ask@flextel.com Registered No 2772380
FLEXTEL®
Flexible Telecoms™

24 July, 2009

Mr Jeff Loan
Ofcom
Riverside House
2a Southwark Bridge Road
London
SE1 9HA

Response to The PRS Scope Review

Response to Consultation dated 15|05|2009
Version 2

FleXtel is an ethical Network Operator, established in 1992, licensed since 1993 and fully interconnected with BT. FleXtel delivers high quality, high value flexible terminating Number Translation Services to businesses and consumers, based in the UK and abroad.

FleXtel has been a strong and vocal advocate for better consumer protection within the UK and EU telecoms industry, whilst at the same time supports minimal regulatory intervention that is targeted to protect consumers, whilst promoting fair and strong competition. This objective is not being delivered today by Ofcom or the EU commission.

Instead Ofcom and the EU are treating a range of the symptoms of rather than the malignant disease of severe call price opacity.
The symptoms of the patient are:

- Rapacious price gouging – 0870, 0800 (mobile)
- Scams & swindles – 070 and 0871
- A plethora of mobile and fixed tariffs…
  Designed to bamboozle consumers and businesses e.g.
  - Ø Charging in whole minutes (including BT)
  - Ø Increasing call setup charges from 4.7p to over 9p (including BT)
  - Ø Restricted “fair use” bundles (including BT)
  - Ø Variation of weekend and evening definitions (6pm/7pm & not Saturday)
- Outrageous Mobile roaming rates
- High Wholesale Termination rates – *UK Mobile is the fashionable target today*
- Leading to Consumer outrage
- Tactical unfocussed micro-regulation that damages competition.

This consultation, like so many issued by Ofcom, deals with just one symptom of the diseased patient, i.e. the open telecoms industry. It offers just palliative care for consumers, in order to be seen to be doing something, presumably to justify Ofcom’s generous salaries and luxury offices, on a prime site next to the Thames.

FleXtel offers a solution that will not only start to cure the disease, by empowering the consumer to make informed choices, it will also drive down prices though fair and strong competition. The solution will:

- Protect consumers and businesses from…
  - Ø Rapacious pricing – 0870, 0800 (mobile)
  - Ø Some scams & swindles – 070 and 0871
- Simplify tariffs, by exposing price trickery.

- Drives down retail prices towards cost
- Drives down costs and thereby "Wholesale Termination rates" –
  - Ø Expensive terminating networks will be exposed, via higher retail cost-based priceing
    e.g. pricing of mobiles calls to other networks will show variation.
- Reduces Consumer outrage
- Better, lighter regulation that supports competition.

This "magical fix" is obvious to erudite economists. It should have been put in place in 1984, but the technology wasn't available. It certainly should and could have been mandated by the EU in the early 2000 and thereby forced upon the industry in 2003, but Governments and new regulators had no appetite to face-up the big Telecom operators throughout Europe e.g. BT, France Telecom and Deutsche Telecom.

So how long will Ofcom prevaricate, fail to grasp this nettle and continue to fiddle whilst Rome burns?

Once again I offer this overarching solution, within the context of yet another mis-targeted, time-wasting and tactical regulatory investigation by Ofcom.

Therefore, please find our response to the questions as presented in the above noted document.

Question 4.1: Do you agree with our analysis of the characteristics of the PRS supply side and the possible concerns related to these characteristics?

Partly, but the scope of Ofcom's analysis is too limited.

Ofcom has completely under-weighted the core issue that Telecoms consumers do not have pricing information available at the point of sale. The point of sale being the moment the consumer places a call.

In most other consumer markets, pricing information is required to be to hand at the point of sale e.g. shops, petrol stations. The consumer is not required to memorise pricing information, provided elsewhere.

For example, it would be considered ludicrous, if consumers had to visit http://www.tesco.com, in order to memorise the prices. Then, later, they enter the supermarket and select products, without any prices being at hand. Finally to receive their bills a month or even three months later!

But this is exactly what the Telecoms industry expects of its consumers. For example, on-line 200+ page tariff tables that requires a degree in mathematics to decode. Just look at the BT tariff:

For example, look at **BT's Residential Price List**:
http://www.productsandservices.bt.com/consumer/consumerProducts/pdf/UKInternationalprices.pdf

I am sure you'll agree, that this 28-page document is complicated and FleXtel believes it to be wholly inaccessible to the average consumer.

However, this document excludes important pricing information for special numbers, such as **Premium Rate**, Freephone, Personal and NTS services.

To get accurate pricing for these services, the BT's Residential and Business special number call price list must be consulted:

http://www.productsandservices.bt.com/consumer/consumerProducts/pdf/SpecialisedNos.pdf

This 66-page tome is a serious challenge to everyone, except rocket scientists! Embedded in these documents are all the tariff tricks to milk the consumer – whole minute charging, rounding up for the call and even for VAT, different time bands. Evening start at 6pm or 7pm, weekends vary and have excluded Saturday from time-to-time. Call set-up fees have risen from 4.7p to over 7p.

By coincidence this is ever since Ofcom removed Oftel's price controls and stated "competition is working and BT pricing no longer need such control".

What a joke this would be, if it wasn't such a serious issue.

How then can Ofcom (and the EU commission) expect the market to function properly, with such determinedly dense price opacity? Perhaps it's the regulators that are dense?

Ofcom even tries to promote Numbering Pricing ladders, in the vain hope and expectation that the consumer would be interested in memorising these as a "guide".

This policy has become even more dubious given the recent 0870 changes, where ironically Ofcom has breached it own policy by trying to make 0870 cheaper than 0844 and 0845, yet 087x except 0870, remains above 0845. Confused, I'm not surprised.

I believe the core issue is to empower consumers, by delivering accurate pricing at the point of sale and for the industry to stop expecting the consumer to memorise prices, let alone calculate the current price based on well-over 6 variables!

For the mobile phone user, (over 50% of the call origination market, according to Ofcom's own research) this means that, at the point of sale, the consumer can be located anywhere. It therefore follows that the only available place to deliver accurate pricing information is via the phone itself.

Pre-Call Announcements

It is clear that Ofcom has dabbled with the concept of Pre-call announcements (PCAs) before, as it does so once again in this consultation. However, it does not seem to have learnt anything from its gross error of judgement that occurred for both the 070 and 0870 interventions. Both interventions were suspended due to the serious health and safety risks associated with PCAs and the fact that they breach ITU regulation E.182.

Ofcom seems incapable of identifying lessons, let alone learning from them. In this consultation Ofcom has not even addressed the risks adequately. It has glossed over the engineering input that **proves PCAs to be unsafe**. This evidence is attached as appendix 1 to this document. Repeating this is a waste of public time (and mine!) .

Furthermore PCAs are in breach of ITU recommendations and this is the working design assumption to which many systems within the telecom industry embrace.
Ofcom varies design rule at its peril:-
http://www.itu.int/rec/dologin_pub.asp?lang=e&id=T-REC-E.182-199803-I!!PDF-E&type=items

> *"that when a subscriber should wait for a network reaction, no tones or announcement should be given. This condition applies during, e.g., dial-tone delay and post-dialling delay."*

So why has Ofcom not fleshed-out the full unsafe implications of PCA?
Why has it not used Ofcom own internal knowledge? Silo working?

PCA has been shown to be unsafe.

Call Price Labelling instead of PCAs
However, the basic concept has merit, it just needs to be built upon and expanded if Ofcom is to regulate properly, i.e. so that its methodology is consistent with other national regulations, in particular:

1) **Any regulatory intervention should be safe.**

2) **Consumers should be empowered to make informed choices.**

Item 1
Is pretty obvious and Ofcom, no doubt, will be aware of the various Heath and Safety regulations.

These include the need for Ofcom to make a full and proper Risk Assessment of any proposed **network** intervention, which, because of PCAs would change system and network operation risk the stability of a plethora of complex automatic life critical systems. These systems have been developed over decades on the working assumption that call flow is not interrupted for 10 seconds or more, whilst a PCA is played. Hence ITU E.182 to protect the inter-operability of such systems.

Item 2
Has been clarified and underpinned recently by the Consumer Protection from Unfair Trading Regulations 2008. These wide ranging Regulations became law on the 26th May, 2008 and apply to all business sectors. They are highly relevant to the malaise in the Telecom market. They support pricing information, as an important aspect of consumer protection. The regulations state (in terms of the definition of misleading actions) that:

> "price or the manner in which the price is calculated" is a consideration "if it or its overall presentation in any way deceives or is likely to deceive the average consumer" such that "it causes or is likely to cause the average consumer to take a transactional decision he would not have taken otherwise".

Obviously placing a call is clearly a "transactional decision". Even in bundled call packages an "in-bundle call" uses up the bundle limit and therefore increases the likelihood of the limit being breached and costs being incurred. In any case many call types, such as premium rate calls, are outside such bundles. So deciding to place a call will depend on its price, which clearly should be to hand at the point of sale i.e. before a

consumer decides to agree to pay for it by dialling (i.e. makes a transactional decision and places the call). The detailed regulations are available here:

http://www.opsi.gov.uk/si/si2008/uksi_20081277_en_1

So what's the solution?
Consider this FleXtel Number: **0871 234 5678**

From 1st of August this will be "premium rate" number, so I'd better warn those readers who are consumers, but not businesses, and might be tempted to dial it, about its price, as follows:

> ***"Each phone call costs 10pence per minute from a BT landline, calls from other networks may vary, mobile costs will be considerably higher"***

This text is simply a "fig leaf" that translates into "none PC speak" as:
"I haven't got a clue what this call will cost you".

FleXtel believes that the consumer should be able to find out the price of the call at anytime and from anyplace. How can this be done simply for the consumer.

Why not deliver the accurate price by just pre-fixing the number with "*".

***0871 234 5678**

This would deliver a free call which announces the accurate price for a call to **08712345678** taking into account:

1) *The current mobile or phone network;*
2) *The current time of day;*
3) *The current day of the week;*
4) *The current owners tariff;*
5) *The current state of this call package bundle;*
6) *The desired number planned to be dialled.*

Today we expect Consumers to work this lot out!

This potential pricing service could be called **Call Price Labelling (CPL)**

An alternative I've considered is "Call Price Check", but clear price labelling is the fundamental economic driver, missing from this market.

Safety of CPL
CPL is safe, since it does not interfere with the normal call path and hence does not vary the engineering parameters upon which millions of systems rely. So avoids all the dangers inherent in PCAs.

Unlike PCAs, which disrupt existing services, CPL is an additional and separate service, hence it cannot destabilise existing services. It also is a lower volume service since not all calls must pass through it.

CPL is Lower Cost than PCA
I expect most consumers to use it only occasionally, to find out the latest price for certain "suspect" cal types e.g. 09xx, 070 and 0870. This will lower the cost to industry, whilst maintaining the same benefits.

CPL is more Beneficial the PCA
Like most consumers, I don't want the inconvenience and the irritation and the time wasting experience of having to listen to the same old PCA every time I place a call.
But I do want a Price checks to hand, accessible at my convenience, from wherever I wish to place a call. Unlike PCA, CPL delivers this benefit without consumer detriment.

CPL will empower consumers to make informed choices when purchasing calls (making transactional decisions).

Furthermore, Regulators and industry bodies (Ofcom, PhonepayPlus, the FCS etc) only need to mandate that the availability of CPL is mandatory and is widely published.

This can be achieved by requiring every advert containing **any phone number** must also contain the following information:-

1) **"*Free call price check? Just dial star, then the number*"**
   or…
2) **"*To find out the call price, just dial star, then the number*"**
   or…
3) **"*What's the call price? Dial star, then the number*"**

etc…

How much better than the current vague warning, as required by Ofcom and PhonepayPlus for premium rate 09 and 087x (*but not 0870*) calls.

CPL Feasibility
Is it feasible? …of course.

Unsurprisingly, the incumbent and entrenched telecom providers have said it's all too complex and too expensive to implement. It is my view that it's their unconstrained tariff structures (*designed to bamboozle the public*) that are too complex.

Those Telecoms operators who cannot implement Call Price Labelling (CPL) just need to simplify their tariffs. …Now, wouldn't that be a refreshing change?

In any can are these carriers to be trusted in this viewpoint, considering they have a prejudicial interest in protecting market-share, using such rapacious pricing and complex opaque tariffs?

FleXtel believes this stance is nothing but a facade, designed to protect lucrative cash-cow interests and cheat consumers. As an ethical provider FleXtel has no such corrupt interest in protecting high call prices. It wishes to deliver best value to consumers.

Since BT and the mobile network operators pay the bulk of Ofcom's funding, is Ofcom strong enough to challenge the big players on this one?

But isn't FleXtel being too prescriptive?

FleXtel would admit that its offered solution may not be the optimum solution, but we challenge Ofcom to facilitate a proper, public debate involving all stakeholders, including consumers.

From FleXtel's point of view it will stop some retailers charging up to £1 per minute for a call, that costs them less than 6p. CPL will expose rogue and rapacious corporate telecom pricing, which damages the UK economy and encourages scams. These scams cause Ofcom and PhonepayPlus to tighten ineffective rules and regulations and so stifle innovation in the underlying bona fide market.

By delivering a simple call-price-check mechanism, CPL, will serve to protect the vulnerable citizen, promote competition and so drive down prices for the benefit of the consumer. This drive down of retail prices, that will in-turn drive down wholesale prices.
For more details see:

http://flextel.com/ofcom/call-price-labelling.html

UK Consumer Campaigns

Without good pricing information, then we can all expect more treatment of the symptoms occurring in the UK and the EU. Examples of this are the well-meaning, but misguided campaigns such as Terminate-the-Rate and Saynoto0870.

These superficially attractive and seductive campaigns only serve to damage competition. They simply move the problem elsewhere e.g. higher mobile prices or, as in the USA, paying for incoming calls to mobiles. So, if you think email spam is bad, just wait until you're paying for incoming calls and your callers pay next to nothing! These campaigns have the right overall intention and we support that, but balance and rigour is what's needed if consumers are to win a long-term benefit.

These campaigns are just a symptom of retail price opacity, not the solution!

EU European Commission

Even the EU, encouraged by populist ideals, are attacking outrageous mobile call prices and roaming charges by tinkering with the beguiling, but corrupting, concept of price caps, instead of looking at consumer empowerment, as the strategic way forward.

Policy

CPL should be part of Ofcom's (and the EU Commission's) overarching core strategy. Not a set of flawed micro-regulatory interventions for mobile termination/roaming rates, 070 numbers, 0870 numbers, 087x (*not 0870*) numbers and 09x numbers.

These interventions, whilst well meaning, threaten to disrupt markets and confuse consumers further. Furthermore they simultaneously reduce choice and serve to kill off grass roots competition and innovation. They are sticking plaster solutions to a malignant disease of retail price opacity.

This Consultation

The lack of a strong policy position by Ofcom for the delivery of consumer empowerment misleads the whole document, once again, down a regulatory cul-de-sac. A cul-de-sac, that leads to harm both to consumers and to competition.

Question 4.2: (a) Do you agree with our analysis of the demand characteristics of PRS?

Partly, but see answer to question 4.1.

Question 4.2: (b) Do you think there are additional characteristics which are not included in our analysis?

Partly, but see answer to question 4.1.

Question 4.3: Do you agree with our assessment of the potential consumer harm in a situation where PRS regulation is ineffective?

Yes, absolutely. FleXtel supports Ofcom's higher objective.

To be clear, it is Ofcom's proposed solutions that are flawed and that will have damaging unintended consequences. This view is based, on over 20 years experience with telecom regulation in both fixed and mobile markets, both in the UK, the EU, the USA and Asia.

Question 4.4: Do you agree with our assessment of the potential and actual consumer harm in respect of PRS?

Partly, but see answer to question 4.1.

Question 5.1: Do you agree with the application of the characteristics to the services?

No, way too complex!

Ofcom is digging itself (*and thereby PhonepayPlus*) into a regulatory hole. This will be unenforceable and lead to regulatory uncertainty. This increases business risk and thereby reduces the appetite for investment in the Telecoms market by competent long-term entrepreneurs. Ofcom's proposals will merely strangle the market and, in due course, push up consumer costs.

Question 5.2: Do you agree with our assessment of potential harm for each of the services?

Partly, but see answer to question 4.1.

Question 5.3: Do you agree with our assessment of alternative means of protection for the new services in our analysis?

Partly, but see answer to question 4.1.

Question 5.4: Do you agree with our analysis of the appropriateness of self-regulatory initiatives in the context of PRS?

No. CPL is the way forward and it must be made mandatory.

Question 5.5: Do you consider self-regulatory initiatives could be implemented for (certain) PRS? If so, please set out for which services, and what such an initiative would look like.

Partly, but see answer to question 4.1.

Question 6.1: Do you consider there is a consumer benefit requiring all OCPs to offer the same retail price to a PRS number?

No, this question shouldn't even be asked. As cited by Channel 4's useful response, there are cartel issues here. This is like the control of the price of bread and caviar in the former Soviet Union. Who sets a fair price, BT? Why not just nationalise the UK Telecoms industry? David Cameron would be very interested in this one.

Question 6.2: If you do believe there is a consumer benefit, do you have suggestions as to how this option could be implemented?

N/A

Question 6.3: Do you consider this option could have any negative side-effects? If so, which ones?

Yes, please read the 1991 Duopoly white-paper or ask some of your free market economists.

Question 6.4: Do you consider PCAs would improve price transparency in the PRS market?

Yes, but the risk and consumer inconvenience need to be weighed properly.

See answer to question 4.1.

PCAs are unsafe and will simply annoy consumers,
who only wish to hear a price from time to time.

Question 6.5: Do you consider Ofcom should carry out such a study? If so, which aspects should such a study cover?

Yes. But CPL should be considered with PCA's and a proper risk assessment should be made for both.

Question 6.6: Do you consider including BT's tariff and a maximum tariff for the PRS in PRS advertisements would improve price transparency in the PRS market?

No. This suggests trying to get consumer to calculate and memorise prices and is meaningless when mobile origination call volume is significantly greater than BTs. See answer to question 4.1. Ofcom needs to recognise BT is no longer core.

Question 6.7: Do you consider the name of the OCP with the highest tariff should be included?

No.

1) Who will monitor and calculate this?
2) How often will it be updated?
3) How will it be enforced?
4) Who will pay for this (the consumer?)
5) How will Ofcom avoid misleading consumers?

Question 6.8: Do you consider there are any additional implications linked to this option, apart from the ones we have set out above?

See answer to question 4.1.

Question 6.9: Could you provide us with an estimate of cost information regarding the collection and updating of tariff information (for SPs and OCPs)?

No, but CPL is comparatively cheap, since the OCP uses its own computer/billing system to inform its own callers on its own network. Any other process is likely to be much less efficient, out-of-date and therefore massively expensive by comparison. PCA are a much more expensive solution compared to CPL. See answer to question 4.1.

Do you believe there are there any other costs involved under this option?

Yes, for PCA, the cost of a life threatening incident.

Question 6.10: Do you agree with our proposal to expand the PhonepayPlus number checker?

Yes.

Question 6.11: Which criteria should be used regarding numbers to be included in the number checker (e.g. revenues, complaints over the last X weeks etc)?

All numbers. Scams are now increasingly occurring on all ranges, for various reasons.

Question 6.12: What information should be included per number in the number checker?

The OCP only. OCP can made to provide a lookup of their SPs & SP their IPs. There are however significant data protection issues here, that Ofcom must consider very carefully.

Question 6.13: Do you agree PhonepayPlus should carry out an analysis into the benefits of requiring SP/IPs to adopt a formal complaints procedure?

Yes, this is important, but only if the SP is not a single user as per 0871 after the 1st August. Ofcom needs to define SP and IP better. It needs to make its proposals compatible with the mess it has made for 0871 single user SPs (consumers).

Question 6.14: Do you consider that in light of developments in the PRS market, IPs should be targeted as a point of regulation, in addition to SPs or on their own? If so, what kind of rules should be applied to IPs and/or SPs?

What is an SP and an IP? See 6.13.

Question 6.15: Do you consider there are other options for a registration scheme / reputational database which have not been included in these studies?

No comment.

Question 6.16: Which is your preferred option, and what are the reasons for this?

No comment.

Question 6.17: Do you agree with our analysis that PhonepayPlus should run a registration scheme / reputational database?

Yes.

Question 6.18: Do you agree with the options identified regarding call barring facilities?

Yes, FleXel strongly supports this suggestion. If applied properly, this can help remove rogue TCPs from the market and thereby avoid it being brought into disrepute.

The risk of a blanket bar by OCPs and excessive market power is of concern to FleXtel and other ethical bona fide TCP's, to the detriment of consumers. How can Ofcom mitigate this risk in a proportionate manner? What checks and balances will Ofcom place on OCPs such as BT and the mobile operators?

William R Goodall BSc, CEng, FIET
Chairman - For and on behalf of FleXtel Ltd

APPENDIX 1

Supporting Material

1. Letter to Ofcom - 19 October, 2007
   Impact Assessment of Pre-Call Announcements on fax/data modem operation

2. Letter to Ofcom - 21 October, 2007
   Fax/data modem operation - Further Information

3. ITU-T E.182
   TELECOMMUNICATION STANDARDIZATION SECTOR OF ITU (03/98)
   Series E: Overall Network Operation,Telephone Service, Service Operation And Human Factors
   Operation, numbering, routing and mobile services – International operation –
   Tones in national signalling systems
   - Application of tones and recorded announcements in telephone services

FleXtel Ltd, FleXtel House, The Commons, Sandbach, Cheshire, CW11 1EG, England
Sales: 0870 321 1000 Support: 0870 3210 100
Internet: www.flextel.co.uk Email: ask@flextel.com Registered No 2772380
FLEXTEL®
Flexible Telecoms™

Mr Geoff Brighton
Competition Group
Ofcom
Riverside House
2a Southwark Bridge Road
London
SE1 9HA

19 October, 2007

Dear Geoff,

Impact Assessment of Pre-Call Announcements
on fax/data modem operation

Thank you for your email received yesterday, requesting further information on the above issue. I note your concerns with respect to the risk associated with 0870 pre-call announcements. I also note that Ofcom needs to better understand the impact that these announcements may have upon automated calling systems, in the light of the problems detected in Ofcom's recent ill considered intervention in the 070 service.

I can confirm that I expect similar problems on 0870 to those suffered on the 070 service. Since the 0870 call volumes and customer bases are much larger than for 070, it is obvious that the incidence of call failure will be much higher and more widespread than for 070.

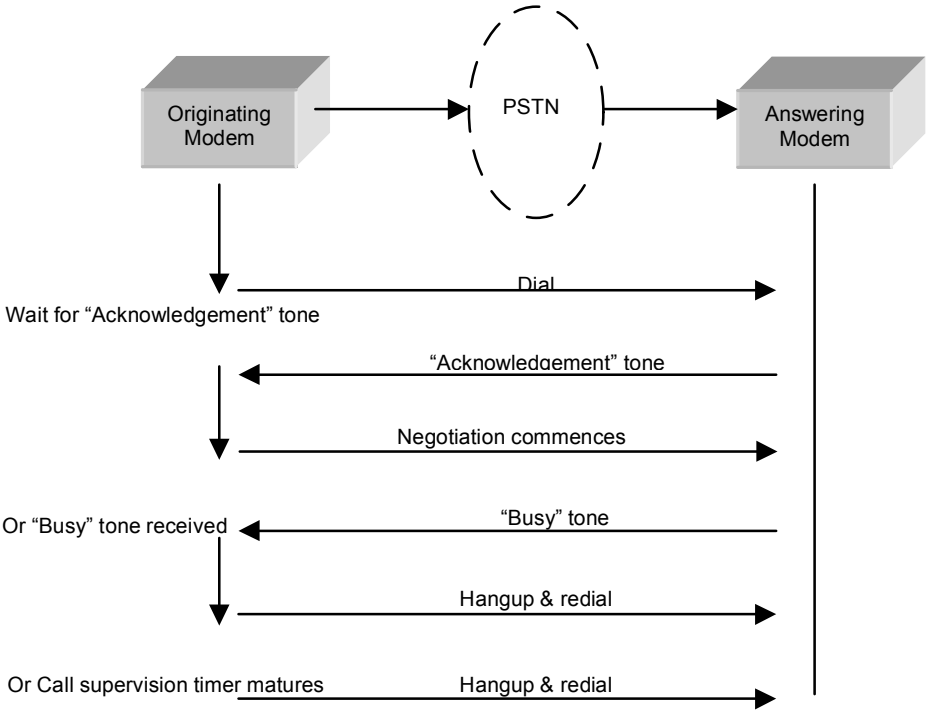
In my earlier correspondence I had assumed that Ofcom has systems engineers at hand who understand how data and fax modems work and so omitted an important, but obvious (to me) step. However, on reading your email I detect that Ofcom still does not grasp fully the underlying causative problem. As a Chartered Electronics Engineer, I am in a position to shed light on the matter and so perhaps save Ofcom and the industry considerable time and effort. I will now outline this missing step.

Fax/Data Modem Handshaking

In simple terms, both fax and data modems work on the same basic principles. Such modems are required to be used in all the types of service cited in your email i.e. fax, fax to email, dial-up Internet, security alarm services, personal alarm services, telemetry services and many other general point-to-point data services. Therefore the "failure" mode induced by pre-call announcements can be expected to be common to all such modem-based services and equipment. This insight should greatly simplify your task of assessing the impact of pre-call announcements on your service list.

Such modems initiate a call by dialling as per a normal "analogue" handset, as depicted in the following diagram. After completion of dialling this "originating" modem then "listens" to the line and waits for an "acknowledgement" tone sent from the far end "answering" modem. On receipt of this "acknowledgement" tone the modems then run through a complex handshaking sequence to determine the best operating speed based on their joint capabilities and the prevailing line quality.

If the "acknowledgement" tone is not heard within a specified time (the call supervision "timeout") then the "originating" modem assumes the call has failed and hangs-ups and redials. This redial timer is necessary to overcome temporary issues such as network congestion, busy line or abnormal call failure.



Redial Timeouts & Embedded Firmware

Over the past twenty years post-dial delay *(the time between the "originating" modem dialling the last digit to connection to the "answering" modem)* has reduced from over 60 seconds to less than 1 second. As a result many modem manufacturers (and also implementers of automatic calling systems) have improved performance by reducing the call supervision "timeout". Originally set to over 60 seconds, this can now be less than 30 seconds. Typically these timer values are stored in the firmware of the "originating" modem and therefore cannot be easily reprogrammed.

Busy Tone Detection

Most modems also can monitor for "busy tone". If, when listening to the line, busy tone is detected, these modems hang up immediately and then redial. This is provided for more efficient network and system operation.

Depending on the quality of the busy tone detection circuit, or Digital Signalling Processing (DSP) algorithm, it is possible that some modems may interpret high levels of "noise" on the line as false "busy tone". This is particularly true for early DSP implementations, where the cost/processing power trade-off delivered mediocre filter performance, but a more stable product in terms of calibration and thermal effects. Many of these early DSP products are still in widespread use.

It is important to note that speech on the line will be seen as a very high level of "noise" in modem terms. Such "noise" levels are unexpected (as the line is normally silent at this time) and as such are likely to be outside the design envelope for commercial modems found in typical fax and data applications.

It is therefore **probable** that a pre-call announcement will cause some modems to detect busy or other progress tones falsely. The modem will then hang-up and retry. This will be dependent not only on the "originating" modem type, but also on the content of the announcement and the timbre of the voice used. If the announcement voice contains sufficient spectral energy, *even fleetingly*, the modem will trigger on "false tone" and hang-up. The symptoms are likely to be inconsistent and the results of a large number of tests need to be taken to confirm that a specific modem type is safe to use in such a hostile "noisy" environment.

Recent tests, with FleXtel customers, indicate that fax modems are suffering false trigger and interpreting speech on the line as either false "busy" tone or false "acknowledgement" tone. This matter is complex and FleXtel does not have the resources to perform the necessary tests to determine the exact nature of the failure.

This suggests that shortening of call announcement may not be a viable solution. Therefore the only option seems to be removal of pre-call announcements altogether.

In Conclusion

I hope the above note is helpful to Ofcom in that it clarifies that the failure is in the originating network modem equipment and this failure is being caused by the originating network's pre-call announcements and is likely to be a common problem for a wide variety of applications. It is also obvious to me that amongst these applications there will be a significant number that are "essential" as defined in your email i.e. where such a failure would put individuals or property at risk.

Although your email calls for an analysis of the various call types and terminating services, it should now be clear from the above that this is unnecessary and would be a waste of both Ofcom's and FleXtel's time and resources.

In any case the above data should now be self-evident and can be validated by reference to the appropriate specifications as published by the ITU and modem manufacturers. A good starting point being here:

http://en.wikipedia.org/wiki/Modem

The pre-call announcement hazard has now been in the network since the 1st September. Some 49 days have elapsed without any significant action being taken by Ofcom or BT. It continues to put over 99% of the live 070 service at risk, if used for modem operation. We believe much of the risk is latent and will occur only at the time of alarm trigger.

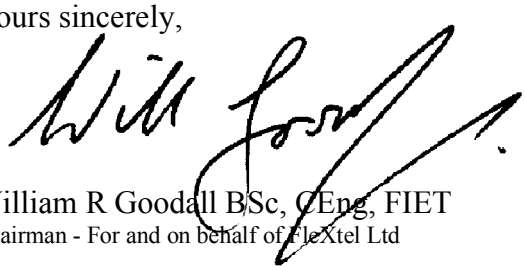
During the consultation process on this issue, Ofcom was warned about the potential failure of fax equipment, due to increased post-dial-delay. Ofcom noted the points made, but chose to carry on regardless. Had Ofcom made a fuller impact assessment and listened more carefully to the learned input of commercial stakeholders, it would have perceived the potential risk underlying this intervention. I have seen no evidence that Ofcom has performed such a risk assessment. It is also now apparent that this intervention has undergone little or no field trials or even laboratory testing. This is something that no professional network operator or switch supplier would normally tolerate for an intervention of this magnitude. I can only assume that the OCPs sit in such fear of Ofcom's dictatorial approach, that they have either forgotten sound working practice or ignore engineer's who plead for it. Indeed I'm very surprised and disappointed that BT, with all its vast resources at Martlesham Heath, could not have foreseen this issue arising. Surely, there must be at least one engineer left in BT who remembers how traditional analogue modems work. If so, he or she should be able to confirm the veracity of this short note.

It should not be up to a mere SME to educate Ofcom so late in the day. It's all very well focussing on the Consumer/Citizen, but Ofcom should learn to separate vested commercial interest from sound technical advice. This is not something that can have political spin applied to it, physics is not subject to such matters and the truth will out. I have warned Ofcom that this option was not viable, in my paper on call-price-labelling. Others have called Ofcom's 0870 intervention "bonkers". I would now agree that to press on in this manner is not only "bonkers" but also reckless and I use the term advisedly.

I would therefore strongly recommend that Ofcom withdraw its requirement for pre-call announcements immediately. There is no need for Consumer surveys, focus groups or market analysis. Just read the modem specifications and act accordingly.

If any of the above is not clear or you wish to discuss the matter further please do not hesitate to contact me. I confirm that I will be attending the NTS Focus Group next Thursday and so I am available on that morning, if you would like to meet at your offices.

Yours sincerely,



William R Goodall BSc, CEng, FIET
Chairman - For and on behalf of FleXtel Ltd

FleXtel Ltd, FleXtel House, The Commons, Sandbach, Cheshire, CW11 1EG, England
Sales: 0870 321 1000 Support: 0870 3210 100
Internet: www.flextel.co.uk Email: ask@flextel.com Registered No 2772380
FLEXTEL®
Flexible Telecoms™

Mr Geoff Brighton
Competition Group
Ofcom
Riverside House
2a Southwark Bridge Road
London
SE1 9HA

21 October, 2007

Dear Geoff,

Fax/data modem operation

Further Information

I hope you found my earlier note on the above issue helpful. I have now returned from holiday and, before I once again immerse myself into everyday tasks, I felt it might be interesting if I did some fundamental research and revision on modem operation. An area I haven't really been deeply involved in for over 10 years. To this end I started ploughing through the ITU-V series recommendations: see: http://www.itu.int/rec/T-REC-V/en

Fax/Data Modem Handshaking

As you would expect, there are a wide number of modem specifications, but the whole story starts with V.21 (300 bit/s) and the inverted specification pyramid is built right up to V.92 (56 kbit/s with enhancements). In all data and facsimile cases the initialisation process relies upon recommendation V.8 (Procedures for starting sessions of data transmission over the public switched telephone network). see: http://www.itu.int/rec/T-REC-V.8/en

You should refer to the T series for more detail on facsimile operation, but specifically T.66, calls up V.8 processes. see: http://www.itu.int/rec/T-REC-T.66-200203-I/en

So this confirms my recollection that facsimile and data modems, initialise in the same basic way.

Busy Tone and Speech Detection

In researching these recommendations I was also interested in how exactly busy tone detection was handled. This led me back to the familiar E series. See: http://www.itu.int/rec/T-REC-E/en

In particular E.180 gave me the characteristics for busy tone. What is interesting here is that it confirms that “busy tone” is only loosely defined by a template to handle both busy and congestion tone. This weak specification is necessary, because busy and congestion tones vary widely from country to country. Furthermore modems need to handle all markets to achieve competitive volume production. Busy tones still differ today, including the UK, Europe and the USA. E.181 (Customer recognition of foreign tones) deals with this rather awkward historic issue. See : http://www.itu.int/rec/T-REC-E.181/en

This means the characteristics of modem filters to detect busy/congestion tone are of necessity wider than one would like. Thus in the presence of high noise levels (e.g. pre-call announcements playing on the line), any busy detection circuit is more likely to false trigger, than if an ideal "tightly" specified (country specific) filter could be used.

The foregoing supports my view that pre-call announcements are likely to lead to error in busy/congestion tone detection and thereby cause premature clear forward (hang-up) by the

originating modem. Furthermore, some more advanced fax/data modems seem to use **speech detection to indicate the user has picked up the line**. Detection of a pre-call announcement will alter modem operation, possibly resulting in failure. This may only affect facsimile and requires further investigation. These findings are also consistent with the quasi-random effects we are observing in the field.

ITU Recommendations - Over 20 years of Working Practice

In trawling through the above, I was reminded of recommendation E.182 (*Application of tones and recorded announcements in telephone services*), where paragraph 3 states:

> *"that when a subscriber should wait for a network reaction, no tones or announcement should be given. This condition applies during, e.g., dial-tone delay and post-dialling delay. Exceptionally when a post-dialling delay on an outgoing international automatic call occurs that is likely to cause a subscriber to abandon the call, an appropriate announcement or a comfort tone may be used if it has been shown to reduce premature abandonment;"*

see: http://www.itu.int/rec/T-REC-E.182/en

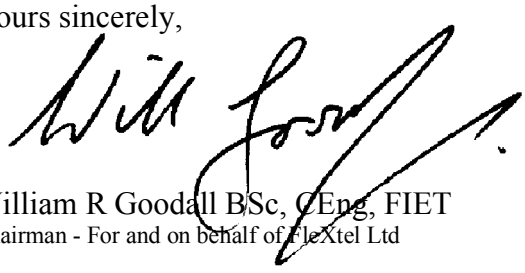
This implies that the working assumption of modem designers is that busy tone detection is performed **when the line is silent**. This recommendation has been in place at least since 1988, so all modems deployed are likely to assume a silent line and so pre-announcements could easily cause widespread premature hang-up of the originating modem. Although Ofcom may feel that it is objectively justifiable to breach this ITU recommendation, in view of the exception in the second sentence and thereby continue to impose pre-call announcements, Ofcom may wish to consider whether it can continue to take the risk of extensive modem failure.

In Conclusion

I have provided you with evidence, which strongly suggests that Ofcom's intervention is in breach of ITU recommendations. Furthermore it appears that Ofcom has failed to consider very clear advice for sound engineering practice, as suggested by the ITU in those same recommendations. It is now clear that shortening announcement alone, and hence the post-dial-delay, may not be sufficient to ensure reliable system operation. As a result I am confident that further system failures will occur, unless Ofcom and UK OCPs switch-off these dangerous announcements. Indeed this is turning out to be an engineering catastrophe of proportions not seen before in the UK telecom market.

I explicitly warned Ofcom not to use this mechanism and recommended an alternative approach, but Ofcom rejected my recommendation. Naturally it may have been my clear prejudicial interest that led Ofcom to ignore my advice. Obviously these pre-call announcements are severely damaging my bona fide personal numbering business. This business was established in good faith under the auspices of Oftel, who created this innovative market. Ofcom's allocation of 070 ranges to known scammers and Ofcom's subsequent draconian intervention to "fix" the problem created by such a blatant lack of number allocation control, is a matter for a separate discussion. However, the ITU clearly has no such prejudicial interest and Ofcom should therefore have no difficulty in assimilating what is plain for all to see.

Yours sincerely,



William R Goodall BSc, CEng, FIET
Chairman - For and on behalf of FleXtel Ltd

INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

E.182

(03/98)

SERIES E: OVERALL NETWORK OPERATION, TELEPHONE SERVICE, SERVICE OPERATION AND HUMAN FACTORS

Operation, numbering, routing and mobile services – International operation – Tones in national signalling systems

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Application of tones and recorded announcements in telephone services

ITU-T Recommendation E.182

(Previously CCITT Recommendation)

ITU-T E-SERIES RECOMMENDATIONS

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For further details, please refer to ITU-T List of Recommendations.

ITU-T RECOMMENDATION E.182

APPLICATION OF TONES AND RECORDED ANNOUNCEMENTS IN TELEPHONE SERVICES

Summary

This Recommendation states some provisions and conditions for the applicability of tones and recorded announcements for user information.

Source

ITU-T Recommendation E.182 was revised by ITU-T Study Group 2 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 9th of March 1998.

FOREWORD

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the ITU. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

INTELLECTUAL PROPERTY RIGHTS

The ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. The ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, the ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

CONTENTS

Recommendation E.182

APPLICATION OF TONES AND RECORDED ANNOUNCEMENTS IN TELEPHONE SERVICES

(revised in 1998)

Introduction

1 This Recommendation gives the responses that telephone networks should provide to subscribers in the operation of both basic and supplementary telephone services. Three levels of response may be given:

– preferred responses based solely upon subscriber requirements;

– accepted responses to be used where technical or economic reasons inhibit the use of preferred responses;

– exceptional responses to be used where severe technical or economic constraints prevent the use of preferred or accepted responses.

2 It has not been possible in some cases to state a universally applicable preference between recorded announcements and tones. The factors influencing such a choice vary widely between Administrations in their relative importance. Some features which make recorded announcements attractive are:

– They can reduce the level of calls to operators thus saving considerable expense.

– From a human factors point of view the use of an excessive number of different tones can be confusing to the user. Recorded announcements give an opportunity to present a far greater spectrum of information.

– They can impart more detailed and specific information than tones.

– They can have less chance of being misunderstood than tones in situations encountered infrequently.

Nevertheless recorded announcements have certain drawbacks also:

– They require more time to convey simple information than a tone indication would.

– They are meaningless to people who do not understand the language used. This fact may make their application in multilingual countries impractical.

– Technical and economic constraints might inhibit their use in some networks.

– Subscribers might not always listen long enough to distinguish between different announcements.

3 In this Recommendation, where no preference is stated between alternative responses, individual Administrations should evaluate the situation in their own networks taking the above factors into account. Additional studies will be undertaken to better evaluate the relative merits of tones and recorded announcements.

4 A list of tones and announcements used as indications to telephone subscribers is given in Annex A.

The ITU-T,

considering

a) that subscribers set up telephone calls and control supplementary telephone services by means of an interchange of information between the subscriber and the telephone system;

b) that information sent by the subscriber to the exchange is standardized in several Recommendations, e.g., Recommendation E.164 for country codes;

c) that information from the telephone system to the subscriber can be sent in the form of tones or recorded announcements;

d) that the technical characteristics of the dial tone, the ringing tone, the busy tone, the congestion tone, the special information tone and the warning tone are specified in Recommendation E.180 and that the specification of other tones is studied by the ITU-T;

e) that a certain tone or recorded announcement should unambiguously indicate the desired subscriber action without requiring subscriber knowledge of the operation of the telephone system;

f) that a standardized application of tones and recorded announcements will improve subscriber performance and will lead to a more efficient use of the telephone network;

g) that for normal telephone calls and supplementary telephone services an identical application of tones and recorded announcements is desirable;

h) that it is easy to implement standardization of the application of tones and recorded announcements for new supplementary telephone services, but this is more difficult for existing telephone systems and should be regarded as a long-term objective;

i) that to avoid abuse of the transfer charge service it is desirable that an operator should be advised when connecting calls to a payphone;

j) that only tones and announcements are covered in this Recommendation although it can be seen that in some cases a visual indication may be an alternative,

recommends

1 that this Recommendation shall apply to all telephone services and telephone networks. PABXs should, with certain indicated exceptions, use the same tones as the network in the country in which it is located;

2 that all tones and recorded announcements should be given as soon as the information received by the telephone network is sufficient to decide which tone or recorded announcement applies, unless there is an established subscriber need for the indication to be given later;

3 that when a subscriber should wait for a network reaction, no tones or announcement should be given. This condition applies during, e.g., dial-tone delay and post-dialling delay. Exceptionally when a post-dialling delay on an outgoing international automatic call occurs that is likely to cause a subscriber to abandon the call, an appropriate announcement or a *comfort tone* may be used if it has been shown to reduce premature abandonment;

4 that when a subscriber should start dialling, a *dial tone* should be given. At PABXs this tone may be different from that at the public exchange and in this case the tone is named PABX *internal dial tone*;

5 that when a subscriber should start dialling and a special condition applies to his line, a *special dial tone* may be given. This condition applies, for example, during activated diversion of calls to another number;

6 that, except for PABXs and supplementary services, a second dial tone should not be used and a second application of dial tone should also be avoided;

7 that when a subscriber should wait until the called party answers and no special condition applies to the line, a *ringing tone* should be given;

8 that when the called number is busy and no special condition applies to the called line, a *busy tone* should be given to the calling subscriber;

9 that when a special condition of either "call waiting" or "call diversion" applies to a called line, the calling subscriber may be informed about the special condition. The responses should therefore be either a *specific recorded announcement* or *caller waiting tone* or *ringing tone*. In PABXs a *special ringing tone* may be used for the "call waiting" service.

In the case of "call diversion", if an announcement is given, it is necessary to give the announcement before the call is diverted. This especially applies if additional call charges have to be paid by the calling party.

10 that a subscriber should be informed when the network has accepted a control order for a supplementary service, e.g., activation, deactivation, registration, erasure. The responses to be given should be either a *specific recorded announcement*, e.g., "alarm call booked for 7.18", a *general positive recorded announcement*, e.g. "order executed" or a *positive indication tone*;

11 that a subscriber – after having applied a valid *interrogation order* for a supplementary service – should be informed by the network whether the service is activated or not (status check) or, if the information dialled is identical to the stored information (data check) or, specifically what information is stored (data request).

If a status check or data check applies, the responses to be given should be:

– either a *positive* or *negative general recorded announcement* e.g., "service (not) active" or "information dialled (not) identical to information stored",

– or an appropriate *positive indication tone*,

– or an appropriate *negative indication tone*.

If a data request applies, the response should be a *specific recorded announcement* e.g. "alarm call booked for 7.18, 9.30 and 12.35" or "no alarm call booked".

12 that a busy subscriber, having the service "call waiting" activated, should be informed that an incoming call is waiting. The response is *call waiting tone*;

13 that when the called number cannot be reached or a control order for activation, registration, deactivation, interrogation, or erasure for a supplementary service cannot be executed by the network in one attempt, due to "short-term system nonavailability" but a repeated attempt within a short time may be successful, a *congestion tone* should be given. This condition applies, for example, if short-term congestion of switching equipment, circuits or memory storage capacity occurs;

14 that when the called number cannot be reached or a control order for a supplementary service cannot be executed in one attempt due to "recognized long-term nonavailability" and a repeated attempt would have no or small probability of success for a longer period of time (e.g., a few hours), the preferred response is a *specific recorded announcement*, e.g., "the called number is not obtainable because of a network fault, please call again after (1) hour". Alternatively, a *general recorded announcement* or *special information tone* may be used.

This condition applies when:

– a number is out of order for technical reasons;

– where switching equipment or circuits or memory storage capacity will not be available for at least a few hours.

15 that when the called number cannot be reached in one attempt because of an unresolved condition of the called number due to administrative reasons, the preferred response is a *specific recorded announcement* e.g., "the number has been changed, the new number is 12345". Alternatively, *a general recorded announcement* or *special information tone* may be used.

This condition applies when:

– a number is out of order for administrative reasons;

– a number is not yet connected;

– a number has changed.

16 that when the information dialled by the subscriber, for set-up of an ordinary telephone call or to order a supplementary service, is not valid or cannot be accepted by the network from that particular line and the subscriber should check his information and/or his instructions before making a new attempt:

– the preferred response is a *specific recorded announcement*, e.g., "In international dialling to this country the trunk prefix 0 should be deleted";

– the accepted response is a general negative announcement, e.g., "You have dialled incorrect information, please consult your instructions". For PABXs a *negative indication tone* may be used;

– the exceptional response is a special information tone.

This condition applies when the number dialled:

– is non-existing,

– is barred for calls from a particular line,

– contains an incorrect prefix,

– is a control order for a service which is not provided to the particular line.

17 that when it is desirable to inform the subscriber to continue dialling during the ordering of a supplementary service in the conversational mode, the response to be given should be either a *specific recorded announcement* followed by the appropriate dial tone, or a *second dial tone*;

18 that an indication should be given when a payphone user is required to make a payment during a call. The response to be given should be either a *specific recorded announcement* or a *pay tone*;

19 that an indication should be given to a public network operator when handling a call from or to a payphone, and that where a tone is used:

– the preferred response is *payphone recognition tone*.

20 that when a subscriber is asked to speak so as to be recorded by a recording machine, a tone should be given to inform him when to begin to speak; the response to be used is the *record tone*;

21 that when the privacy of a conversation on a call cannot be ensured, e.g., because of the intrusion of an operator, the preferred response is the *intrusion tone* given to both subscribers;

22 that when the privacy of a conversation on a call cannot be ensured, e.g., because of the presence of a recording machine, the preferred response is the *warning tone*;

23 that all the above-mentioned tones should be different.

Annex A

List of tones and announcements used as indications to telephone subscribers

NOTE – This annex is provided to explain the terms in this Recommendation and some related terms. It is not a definitive list and additional refinement will be undertaken as part of future studies.

A.1 Basic terms

A.1.1 audible indication

F: indication audible
S: indicación audible

An audible indication is understood to be a sound composed of frequencies within the range 300-3400 Hz which is used to inform the user about the state of a telephone call or supplementary service.

A.1.2 tone

F: tonalité
S: tono

A tone is an audible indication comprising a small number of discrete frequencies, but excluding speech.

A.1.3 recorded announcement

F: annonce enregistrée
S: anuncio grabado

An audible indication in the form of speech.

A.1.4 call information

F: information d'appel
S: información de llamada

Call information includes normal address information, control codes for supplementary services, and other information dialled or keyed by the subscriber.

A.2 Tones

A.2.1 dial tone

F: tonalité d'invitation
S: tono de invitación a marcar

A tone advising that the exchange is ready to receive call information and inviting the user to start sending call information.

A.2.2 PABX internal dial tone

F: tonalité d'invitation interne de commutateur privé
S: tono de marcar interno de centralita privada automática, tono de invitación a marcar interno de centralita privada automática conectadas a la red pública

A tone advising that the PABX is ready to receive call information and inviting the user to start sending call information.

A.2.3 special dial tone

F: tonalité d'invitation spéciale
S: tono especial de invitación a marcar

A tone advising that the exchange is ready to receive call information and inviting the user to start sending call information, at the same time reminding the user that special conditions apply to the termination from which the call is being made.

A.2.4 second dial tone

F: seconde tonalité d'invitation
S: segundo tono de invitación a marcar

A tone advising the caller that the network has accepted the call information already sent and asking the caller to provide more information.

A.2.5 ringing tone

F: tonalité de retour d'appel
S: tono de llamada

A tone advising the caller that a connection has been made and that a calling signal is being applied to a telephone number or service point.

A.2.6 special ringing tone

F: tonalité spéciale de retour d'appel
S: tono especial de llamada

A tone advising the caller that the exchange of the called number has some special service in effect (such as Call Forwarding of Call Waiting) and that an appropriate calling signal is being applied and therefore the caller should wait for an answer.

A.2.7 busy tone

F: tonalité d'occupation
S: tono de ocupado

A tone advising the caller that the telephone number is busy.

A.2.8 congestion tone

F: tonalité d'encombrement
S: tono de congestión

A tone advising the caller that the groups of lines or switching equipment necessary for the setting-up of the required call or for the use of a specific service are temporarily engaged.

A.2.9 special information tone

F: tonalité spéciale d'information
S: tono especial de información

A tone advising the caller that the called number cannot be reached for reasons other than "subscriber busy" or "congestion".

The tone may also be used in conjunction with recorded announcements to signify that what the caller is about to hear is a recording. It should always be used to precede all call failure announcements.

A.2.10 warning tone

F: tonalité d'avertissement
S: tono de aviso

A tone warning participants in a call that privacy of a conversation cannot be ensured where a recording machine is being used.

A.2.11 intrusion tone

F: tonalité d'intrusion
S: tono de intervención

A tone advising participants during a call that the privacy of the conversation has been breached, e.g. by the intervention of an operator.

A.2.12 call waiting tone

F: tonalité d'appel en instance
S: tono de indicación de llamada en espera

A tone advising the user of the call waiting supplementary service who is engaged on a call that someone is attempting to call his number.

A.2.13 pay tone

F: tonalité de paiement
S: tono de pago

A tone advising users of a payphone that a payment is required.

A.2.14 payphone recognition tone

F: tonalité d'identification de publiphone
S: tono de identificación de teléfono de previo pago

A tone advising a public exchange operator that the termination to or from which connection is sought is identified as a payphone.

A.2.15 comfort tone

F: tonalité d'attente
S: tono de paciencia

A tone advising that the call is being processed and that the caller should wait.

A.2.16 tone on hold

F: tonalité de garde
S: tono de retención

A tone used to reassure a calling subscriber who has been placed on "hold" by a subscriber with PBX or other facilities.

A.2.17 record tone

F: tonalité d'enregistrement
S: tono de grabación

A tone generated by automatic answering equipment to inform the calling subscriber when to begin a message which will be recorded.

A.2.18 caller waiting tone

F: tonalité d'attente de l'appelant
S: tono de indicación de llamada en espera para el llamande

A tone advising a caller that a called station, though busy, has a call waiting service active.

A.2.19 positive indication tone

F: tonalité d'indication positive
S: tono de indicación positivo

A tone telling a subscriber controlling a supplementary service that the control procedure has been successfully completed and accepted.

A.2.20 negative indication tone

F: tonalité d'indication négative
S: tono de indicación negativo

A tone advising a subscriber that the request for service cannot be accepted.

A.3 Recorded announcements

A.3.1 general recorded announcement

F: annonce enregistrée générale
S: anuncio grabado general

A recorded announcement giving general information about a call attempt or control order.

A.3.2 general positive recorded announcement

F: annonce enregistrée générale positive
S: anuncio grabado general positivo

A recorded announcement given to the user of a supplementary service to advise that the request has been accepted.

Example

"Your order has been executed."

A.3.3 general negative recorded announcement

F: annonce enregistrée générale négative
S: anuncio grabado general negativo

A recorded announcement given to the user of a supplementary service to advise that the request cannot be executed or that the call cannot be completed.

Examples

"Your order cannot be executed."
"Your call cannot be completed at this time."
"Please try again."

A.3.4 specific recorded announcement

F: annonce enregistrée spécifique
S: anuncio grabado específico

A recorded announcement giving specific information about a call attempt or control order.

A.3.5 specific positive recorded announcement without supplementary information

F: annonce enregistrée spécifique positive sans information supplémentaire
S: anuncio grabado específio positivo sin información suplementaria

A recorded announcement indicating to the user that the request for a particular supplementary service has been accepted.

Example

"The call barring service is now in operation."

A.3.6 specific negative recorded announcement without supplementary information

F: annonce enregistrée spécifique négative sans information supplémentaire
S: anuncio grabado específico negativo sin información suplementaria

A recorded announcement indicating to the user that the request for a particular supplementary service cannot be executed or that the call cannot be completed.

Examples

"Your order for call transfer cannot be executed."
"The called number is not obtainable because of a network fault."

A.3.7 specific positive recorded announcement with supplementary information

F: annonce enregistrée spécifique positive avec information supplémentaire
S: anuncio grabado específico positivo con información suplementaria

A recorded announcement complete with the supplementary information received indicating to the user that a certain condition is being established.

Example

"An alarm call is booked for 6.30."

ITU-T RECOMMENDATIONS SERIES

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Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks and open system communications
Series Y	Global information infrastructure
Series Z	Programming languages