



Leading Technologies: Touching Lives

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The Independent Communications Authority of South Africa
Pinmill Farm Block A
164 Katherine Street
South Africa

Attention: Mr Manyapelo Richard Makgotlho

By email: rmakgotlho@icasa.org.za

Dear Sir

**SUBMISSION ON THE DRAFT FREQUENCY MIGRATION REGULATIONS AND FREQUENCY
MIGRATION PLAN (AUGUST 2012)**

Please find herewith Altech's written submission in response to the notice inviting comments on the Draft Frequency Migration Regulations and Frequency Migration Plan as published in Government Gazette Number 35598.

Altech would like to thank the Authority for the opportunity to make written comments on the draft Frequency Migration Regulations and Frequency Migration Plan. Furthermore, Altech confirms its willingness to participate in any further consultative process, including participating in any oral presentations, which the Authority may schedule in respect of this matter.

Yours faithfully

**CRAIG VENTER
CHIEF EXECUTIVE OFFICER
ALLIED TECHNOLOGIES LIMITED**

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ALLIED TECHNOLOGIES LIMITED

**SUBMISSION ON DRAFT FREQUENCY MIGRATION REGULATIONS AND
FREQUENCY MIGRATION PLAN (AUGUST 2012)**

As published in Government Gazette Number 35598

**ALTECH SUBMISSION TO THE DRAFT FREQUENCY MIGRATION REGULATION AND
FREQUENCY MIGRATION PLAN AUGUST 2012 AS PUBLISHED IN GOVERNMENT
GAZETTE NUMBER 35598**

1. INTRODUCTION

- 1.1. Allied Technologies Limited ("**Altech**") is a company duly incorporated under the laws of the Republic of South Africa and is listed on the stock exchange operated by the JSE Limited ("**JSE**").
- 1.2. Altech, through its subsidiaries, holds several Individual Electronic Communication Network ("**IECN**"), Individual Electronic Communication Services ("**IECS**") and Spectrum licenses issued by Independent Communications Authority of South Africa ("**Authority**") in terms of the Electronic Communications Act 36 of 2005 ("**ECA**"). Altech is a user of the radio frequency spectrum.
- 1.3. Altech would like to thank the Authority for this opportunity to make comment on the Draft Frequency Migration Regulation and Frequency Migration Plan August 2012 ("**Draft Regulations**").
- 1.4. Altech would like to commend the Authority for preparing such a comprehensive set of Draft Regulations. The Regulations seek to harmonise the current spectrum, which in Altech's opinion has been long overdue.
- 1.5. Altech submits that the draft regulation makes substantial changes to the current frequency plan and whilst at face value this is extremely encouraging it wishes to raise a few matters for the Authority to consider.
- 1.6. Altech requests an opportunity to make oral presentations in the event that the Authority decides to have oral hearings on this matter.
- 1.7. This submission consists of two broad categories, firstly Altech raises some administrative and constitutional matters for the Authority to consider and secondly it provides specific input to technical matters of the Draft Regulations.

2. ADMINISTRATIVE AND CONSITUTIONAL MATTERS

- 2.1. The Draft Regulations purport to establish the framework in terms of which the Authority may migrate users of the radio frequency spectrum under the National Radio Frequency Plan.
- 2.2. The Draft Regulations purports to develop a Radio Frequency Migration Plan with the aim of managing spectrum efficiently to the benefit of all South Africans in terms of section 2(e) of the ECA.

- 2.3. The Draft Regulations allow the Authority to migrate users of radio frequency spectrum and to amend a licence issued to a user of the radio frequency spectrum in order to (i) move such user from its existing radio frequency spectrum location to another, and/or (ii) move uses of radio frequency spectrum from one location to another.¹
- 2.4. Essentially, in terms of this process, Altech has some concerns that its already determined rights (as per its existing licences) to use the radio frequency spectrum, may be altered in ways that have negative consequences for Altech's business operations, its customers and its ability to plan ahead. In particular, Altech is extremely concerned that in certain instances, it is possible that one or more of Altech's existing rights to use the radio frequency spectrum may be revoked.
- 2.5. In Altech's view, this entitlement on the part of ICASA to affect existing rights and even to revoke existing rights, potentially violates section 25 of the Constitution of the Republic of South Africa, 1996 ("Constitution") which affords property rights to anyone, including Altech. In general, section 25(1) of the Constitution prohibits arbitrary deprivation of one's property by law. In addition, sections 25(2) to (4) of the Constitution regulate expropriation, by providing that property may be expropriated only by law of general application for a public purpose or in the public interest, and subject to just and equitable compensation.
- 2.6. Although the South African courts have not settled the question of whether property of an incorporeal nature constitutes constitutionally protected property, one of the foremost constitutional property scholars in South Africa, AJ van der Walt, makes the point that "*in view of foreign examples, one would expect constitutional property to include ... commercial property interests [such as] licences*".²
- 2.7. Expropriation of property rights by the State attracts an obligation on the part of the State to pay just and equitable compensation to the person deprived of their property rights. Expropriation is considered to be a subset of deprivation, and can only be undertaken by the Government for a public purpose or in the public interest. Further, expropriation involves a loss of property, which is usually total or permanent loss.
- 2.8. While Altech understands and appreciates that the underlying purpose of the Proposed Regulations and Plan is to establish a framework in terms of which

¹ Regulation 6 of the Draft Frequency Migration Regulations and paragraphs 1.2.2 and 2.1.2 of the Draft Frequency Migration Plan.

² AJ Van der Walt *Constitutional Property Law* (2005) at 87.

the Authority can efficiently manage spectrum to the benefit of all South Africans, Altech is concerned that the Draft Regulations provide no guarantee that upon conclusion of the migration process, a user with existing rights to use the radio frequency spectrum will end up with substantially similar rights as had been provided for in such user's prevailing licence.

- 2.9. To this end, paragraph 1.2 of the Annex to the proposed Frequency Migration Plan confirms that a licence may be revoked or withdrawn before its expiry in the case of "*overarching public interest concerns in enabling the highest value use of spectrum*". Paragraph 1.2 of the Annex to the proposed Frequency Migration Plan further provides that "*if the licence is revoked before expiry in the case of overarching public interest concerns, such as an international obligation out of e.g. the ITU, then a revocation would require compensation covering the cost of relocation or clearing up the radio frequency spectrum.*" (our underlining added)
- 2.10. To the extent that any of Altech's property rights are expropriated as a result of the completed migration process, in that Altech ends up with substantially less rights than it has under its prevailing radio frequency spectrum licences, then Altech is of the view that appropriate compensation should be forthcoming from the Authority. Section 25(2)(b) of the Constitution provides that the amount of compensation and the time and manner of its payment have to either be agreed to by those affected, or decided or approved by a court. Section 25(3) of the Constitution provides that the amount of compensation and the time and manner of its payment must be just and equitable, reflecting an equitable balance between the public interests and the interests of those affected, having regard to all relevant circumstances, including: (a) the current use of the property; (b) the history of the acquisition and use of the property; (c) the market value of the property; (d) the extent of direct state investment and subsidy in the acquisition and beneficial improvement of the property; and (e) the purpose of the expropriation. The Land Claims Court has held that just and equitable compensation should be assessed in two stages:
- 2.10.1. the court must determine the market value of the property by using accepted valuation methods and principles; and
- 2.10.2. after arriving at the market value, the court must consider to what extent the market value must be adjusted according to the

dictates of the other factors referred to in (a), (b), (d) and (e) above.³

- 2.11. In Altech's view, the Proposed Regulations and Plan potentially fall short of the requirements of section 25 of the Constitution relating to the payment of just and equitable compensation where property is expropriated. The reasons for this conclusion are set out below:
- 2.11.1. Firstly, it does not provide for the amount of compensation and the time and manner of its payment to either be agreed to by the parties affected or decided or approved by a court.
- 2.11.2. Secondly, the Proposed Regulations and Plan do not seem to provide for the payment of compensation in circumstances where a licence is not revoked, but is amended such that one or more, but not all, of the rights given effect through a licence are removed totally and permanently.
- 2.11.3. Thirdly, the assertion that compensation will cover "*the cost of relocation or clearing up the radio frequency spectrum*" potentially limits the amount of compensation, which must be paid to the affected party, as contemplated in section 25(3) of the Constitution.
- 2.11.4. Lastly, it does not set out clearly what is meant by the term "overarching public interest concerns in enabling the highest value use of spectrum". Expropriation of property is strictly permissible only for a public purpose or in the public interest. For example, expropriation is not permissible where it is undertaken in pursuit of the interests of a single individual.⁴
- 2.12. Altech has also noted that Regulation 3(5) of the proposed Frequency Migration Regulations states that "*users to be migrated shall not be entitled to be compensated by the Authority for the costs of migration*". In this regard, the Proposed Regulations and Plan do not set out clearly what ICASA will do to minimise the costs and disruption associated with the process of migration. Altech submits that in order to safeguard the electronic communications industry, it is important that the Proposed Regulations and Plan include practical and efficient mechanisms, which will be diligently managed by ICASA, to minimise the costs and adverse impact on business operations, as

³ *Khumalo v Potgieter* [2000] 2 All SA 456 (LCC) at 72 to 93. See also Theunis Roux 'Property' in *Constitutional Law of South Africa* [2nd ed Original Service: Dec 03] at 46-34.

⁴ Theunis Roux 'Property' in *Constitutional Law of South Africa* [2nd ed Original Service: Dec 03] at 46-33.

well as disruptions to customers, resulting from the planned radio frequency spectrum migration.

- 2.13. Altech submits that it does not support the principle that the Authority may withdraw or revoke the radio frequency spectrum rights of licence holders in such a manner that a licence holder's existing rights may be removed without just and equitable compensation, as this may be unconstitutional for the reasons mentioned above. In addition, Altech is of the view that the Authority has a fundamental duty to minimise functional and economic disruptions during the course of the migration process and requests that the Authority provides certain assurances in this regard.
- 2.14. Finally, Altech submits that the process followed by the Authority in respect of radio frequency migration (referred to in Regulations 4 and 5 of the Draft Regulations) as well as the amendment of radio frequency spectrum licences (referred to in Regulation 6 of the Draft Regulations) must be equitable, objective, transparent, consistent and procedurally fair, in accordance with constitutionally enshrined principles. In particular, in the event that individual users' rights are affected by migration, prior notice of any proposed decision and an opportunity to make representations will have to be given. This is in addition to a general notice and comment procedure that may be followed to give the public as a whole the opportunity to comment on the Draft Regulations.

3. CONSULTATION WITH THE MINISTER

- 3.1. Paragraph 2.1.1 of the Draft Regulations provides that, *"it is clear that ICASA has the obligation and authority to plan and implement the migration of users, subject to the approval of the Minister with respect to government entities."* Furthermore, paragraph 2.3.2 of the Draft Regulations provides that, *"ICASA is the responsible body for frequency migration planning [and that] ICASA has the obligation to consult with the Minister on various issues, notably where migration involves government entities and organisations."*
- 3.2. In addition S 34(10) of the ECA states that after the relevant hearings and after considering any submissions made at the hearing *"... the Authority must forward the national radio frequency plan to the Minister for approval"*.
- 3.3. The above provisions suggest that, in developing the Frequency Migration Plan, ICASA need only involve the Minister of Communications where government entities and organisations are affected.
- 3.4. However, section 34(7)(c)(iii) of the ECA provides that in preparing the national radio frequency plan, ICASA must *"consult with the Minister [of Communications]"* to *"co-ordinate a plan for migration of existing users"*.

- 3.5. The term "radio frequency plan" is defined in section 1 of the ECA as:

"a national plan that includes, but is not limited to:

a table of frequency allocations for all bands below 3000 GHz taking into account the ITU table of allotments, in so far as such allotments have been adopted and agreed upon by the Republic, which may include designations of certain utilisations; and

a plan, as applicable, for the migration of systems and equipment of existing users within specific radio frequency bands, including radio frequency bands for security services, to different frequency bands".

- 3.6. In the circumstances, in Altech's view, the proposed Frequency Migration Plan constitutes a radio frequency plan (or at least a subset of the national radio frequency plan), and thus there must be consultation with the Minister of Communications in its preparation and finalisation.

4. TECHNICAL COMMENTS

- 4.1. Clause 4.8 the Draft Regulations propose that All Public Safety services should be consolidated in the same radio frequency band (380 – 400 MHZ).
- 4.2. Altech strongly supports this proposal. Historically non synchronised deployments by different Public Safety agencies has both increased public risk in times of emergency, through a lack of inter-agency communication, as well as wasted public resources through the deployment of independent networks by multiple agencies in the same geographical area. To this extent it should be of value that the Government focus on a strategy to align all Public safety users into a common inter agency communication workgroup that is expected by law to provide long term strategies in reaching these goals collectively.
- 4.3. It is critical that public safety services are able to communicate between themselves and between each other in order to effectively fulfil their respective mandates.
- 4.4. Migrating all such services to the same frequency band will go a very long way to ensuring that public safety users have a standardised national frequency allocation.
- 4.5. Altech supports the proposal by the Authority that Public Safety users should consider a common radio standard as well as utilising shared infrastructure. This practice is common in many other countries particularly in the UK and Europe.

- 4.6. It is also worth noting that the establishment of common shared public safety communications infrastructure is already in place in the Gauteng Province where the South African Police Service provincial TETRA network is also utilised by other law enforcement and emergency management agencies. It is therefore very plausible that this model as used in Gauteng can be replicated throughout the country.
- 4.7. The Authority proposes that the band 405 MHz to 430 MHz be allocated Public Digital Trunking. Altech strongly supports this proposal and believes that this band should be allocated to organisations that have the skills, knowledge, financial capacity and have demonstrated the ability to establish and operate a public trunking network.
- 4.8. Altech submits that the benefits of a national band for Public Digital Trunking would yield substantial benefits. However, this band should be allocated primarily to users that can demonstrate the ability to fully utilise the spectrum for the provision of such a service on a national basis.
- 4.9. The Authority proposes that the band 450 MHz to 470 MHz be allocated to Mobile (IMT) as per WRC-07 Res. 224.
- 4.10. Altech supports this proposal. It is critical that the Authority take note of developments in other jurisdictions namely the United States of America and Europe where regulatory bodies are advocating a dedicated band for public safety LTE.
- 4.11. Notwithstanding the contentious issues relating to the digital dividend in the 700MHz and 800MHz bands, Altech proposes that the Authority allocate the 450MHz to 470MHz as a dedicated band for Public Safety LTE. In addition the Authority should encourage Public Safety users to adopt a common standard and common platform to ensure inter-operability and economies of scale
- 4.12. Professional Mobile Radio**
- 4.13. The Authority has requested specific comments on the issue of technology neutrality and the use of FDMA and TDMA technologies within specific bands for Professional Mobile Radio ("PMR"). For the purpose of this subject we interpret FDMA to be the 'dPMR' technology and TDMA to be the 'DMR' technology. Other considerations would be applied to alternate FDMA and TDMA technologies.
- 4.14. Altech submits that the departure point in addressing this matter is correctly articulated in the principles of the Draft Regulation, where the Authority has based the majority of its proposals on compliance with international treaties, regulations and standards.

- 4.15. Both TDMA and FDMA systems are currently defined by ETSI. However, it is critical that the Authority take into consideration that not all equipment manufacturers comply with the defined ETSI specifications.
- 4.16. In particular there is a defined ETSI standard for FDMA dPMR tier 3 trunked systems. Despite this specification, to date manufacturers have developed proprietary FDMA systems, which make use of FDMA protocols but that their protocols are not in compliance with the ETSI standard.
- 4.17. In addition to compliance with ETSI specifications, Altech strongly urges the Authority to consider the global uptake and emerging trends in the PMR industry.
- 4.18. There are significantly more Original Equipment Manufacturers who have adopted the TDMA specification and have invested billions of dollars into equipment and ensuring inter-operability between themselves. The number of OEM vendors that have adopted the ETSI specification for FDMA is less than 3.
- 4.19. This global adoption by the major OEM's is crucial to ensuring that there are sufficient numbers of suppliers, which leads to greater competition and ultimately gives the end user lower cost products, with inter-operable devices across different manufacture infrastructure/networks.
- 4.20. Recent studies by IMS shows clearly that the global uptake of TDMA systems far exceed the uptake of FDMA systems by substantial multiples. This is particularly relevant for the South African market as operators and users of TDMA systems will reap the benefits of economies of scale and reduced terminal costs much faster in TDMA than with FDMA.
- 4.21. Technically, 2 slot TDMA systems are fully compliant with a 12,5kHz raster. It is critical that the Authority take this issue into account. Compliance with existing channel spacing and filter masks between existing analogue systems and new digital TDMA solutions will ensure a substantially easier migration of the PMR sector from analogue to digital.
- 4.22. The advantages of TDMA digital systems to the end user are substantially better than that of FDMA systems. TDMA systems allow for an immediate doubling of capacity in the same spectrum, the same cannot be said for FDMA 6.25 kHz systems as there needs to be a guard band between an allocated 6,25kHz carrier FDMA pair and any conventional analogue or TDMA allocation resulting in FDMA systems requiring slightly more than 12,5kHz of bandwidth to accommodate two carriers.
- 4.23. TDMA systems, which double the channel capacity utilising the same 12,5kHz bandwidth as analogue systems are significantly more power

efficient from a terminal perspective because the terminal devices are only transmitting half the time.

- 4.24. Field tests conducted by numerous manufacturers have shown up to a 40% reduction in power utilisation when operating in 2-slot TDMA systems. The same cannot be said for FDMA systems.
- 4.25. 12,5 kHz raster for TDMA allows for 6,25 kHz operation as well, provided only one 6,25kHz channel is allocated within a 12,5kHz opening. This is important as it allows the Authority to have both systems deployed in the country without compromising the issue of technology neutrality.
- 4.26. It is Altech's submission that the Authority should consider the standardisation of TDMA for digital PMR applications. Such a decision would align with International best practices, comply with ETSI specifications, allow South Africa to benefit from global economies of scale and give greater choice to end users. At the same time this decision would still allow for FDMA 6,25 kHz applications if required.

5. CONCLUSION

- 5.1. Altech is generally supportive of the Draft Regulations and commends the Authority for the insightful and progressive manner in which it has approached the Draft Regulations.
- 5.2. Notwithstanding the few constitutional and administrative matters mentioned herein that require further review by the Authority, Altech supports the technical proposals as enshrined in the Draft Regulations.
- 5.3. Altech firmly believes that greater participation and co-operation, and improved competition in the sector, together with a pragmatic and integrated regulatory environment, is the most viable solution to address our countries telecommunications and broadband needs, and to progress infrastructure development, innovation and investment across South Africa.
- 5.4. Altech would again like to thank the Authority for the opportunity to written submission and requests the opportunity to further augment this submission with an oral presentation as proposed by the Authority from 8 to 11 October 2012.