Submission - Radiocommunications (Mid West Radio Quiet Zone) Frequency Band Plan and associated Discussion Paper

Position Statement

Sinosteel Midwest Corporation (SMC), acknowledges the importance of the Murchison Radio-astronomy Observatory (MRO) to the Mid West Region, the State of Western Australia, and the Commonwealth of Australia, as well as the rest of the world SMC cannot however support the proposed changes to spectrum management as detailed in the Radiocommunications (Mid West Radio Quiet Zone) Frequency Band Plan and associated Discussion Paper on proposed regulatory measures for the Mid West Radio Quiet Zone (RQZ).

Summary

SMC understands the importance of the MRO to the Mid West Region, the State of Western Australia, and the Commonwealth of Australia, as well as the rest of the world.

The development of the MRO, as well as the Oakajee Port and supporting industries and mines, will generate significant benefits for the Mid West and stimulate flow-on investments more broadly throughout the State and Nation.

SMC has significant tenement holdings, solely in the Mid West, is currently operating at its Koolanooka Mine site, as well as undertaking ongoing exploration and study activities at Weld Range. The Weld Range Mine is a $2B development with a projected 15Mtpa for 15 years, an operating workforce of ~850, and annual Stat Royalties of ~$90M pa. The CSIRO is well aware of these significant project parameters, and has commented on SMC’s Weld Range through its Public Environmental Review. Further information on the activities of SMC can be found at www.sinosteelmidwest.com.au

The recent joint communiqué from WA and the Commonwealth Governments clearly articulates the need to support the radio-quiet requirements of the MRO through the implementation of measures to minimise radio-frequency interference by establishing a Radio Quiet Zone (RQZ).

It also states that while “industry may be able to operate within the 70kms radius Radio Telescope Mineral Resource Management Area, such operation would be secondary to radio astronomy and consequently subject to the stringent controls of the proposed ACMA Band Plan and the Western Australian Mining Act (1978).”

The communiqué also references that for “industry, activity between a radius of 70 kms and 150 kms a co-existence principal will apply.” And that “industry in this region would be required to consult with the MRO entity to develop technical solutions that minimise the radio-frequency impact of their operation on the radio astronomy operations.”

From the communiqué it is apparent the Governments recognise the need for industry to have sufficient certainty regarding long-term spectrum use to enable investment decisions to be made on the potential estimated $20B worth of mining related projects identified for the coming years in the Mid West.
Currently the proposed Band Plan and current MoU, reflect a different priority allocation than that in the communiqué, namely that the MRO has the "greatest economic value" when considering the use of the spectrum, that the ROZ is 100 kms, and that it always was 100kms — according to the latest fact sheet issued by the CSIRO on 13 December 2010.

From our research we have been able to establish that point 3.7 of the Memorandum of Understanding (MoU) on the Square Kilometre Array Project between the Commonwealth and State of Western Australia from September 2007 clearly states:

"The Governments’ first priority is to maintain the quality of the site, especially its radio quietness, and facilitate the establishment and operation of relevant pilot and demonstration projects for the SKA. The Governments will use their best efforts to ensure that other economic activities in the region can proceed normally, provided this does not interfere with or compromise the site, the observatory or international bid."

This is a broad statement that is inconsistent with the acknowledgement within the communiqué that co-existence will apply between 70 and 150 kms.

Point 4.1 of the 2007 MoU clearly states:

"To achieve the goals identified in Section 2 of this Memorandum of Understanding the Governments will cooperate on the following tasks:

A Establish and safeguard a radio quiet zone in the Mid West of Western Australia, with appropriate development and other controls for 30 Km radius, 70 Km radius and up to 260 Km radius areas,..."

Issues arising from these inconsistencies, and the overall evaluation of the SKA project include:

1 The initial MRO site had a 30, 70 and 260 km radius. These were to mining companies and infrastructure providers, and while being an imposition on their projects, were accepted as necessary, in order to ensure the establishment of the MRO

2 The radius of the MRO was increased with the relocation of the MRO site, and that now the original 30 and 70 km radius are being dismissed in some documentation and conversations as never existing

3 The new Band Plan and existing MoU are designed solely with the MRO as priority, which is totally inconsistent with the communiqué and the spirit in which it was drafted

4 The results is uncertainty amongst mines, infrastructure providers and their shareholders and financiers this is problematic for any organisation wishing to work within the Mid West as unless greater regulatory certainty can be provided, access to debt and equity funding will be extremely difficult, if not impossible, and would come at a greater cost.

This is the case for SMC, and other Projects such as Crosslands and OPR, AND the State and Federal Governments which have committed to significant investment in port side infrastructure
at Oakajee. Advice has been received that the Governments would find it as difficult and the projects to provide funding under the proposed Band Plan and priority being given to the MRO.

SMC has formed the view that it is both unnecessary and counterproductive to unconditionally oppose the proposed Radiocommunications (Mid West Radio Quiet Zone) Frequency Band Plan and associated Discussion Paper on proposed regulatory measures for the Mid West Radio Quiet Zone (RQZ). We have instead, developed a number of conditions that are required to be met in order for SMC to fully support a Band Plan.

These items are detailed in Requirements section of this submission. Specifically these include the redrafting of the current Band Plan and MoU to reflect the content of the joint communiqué as well as to have an independent assessment of the impact that any proposed Band Plan will have on other activities in the Region to allow for mutually-agreeable strategies to be developed, this meeting the cooperative development aspirations of all investors in the Mid West.

SMC fully supports all and any submissions from OPR and Crosslands as well as the CCI, CME and Geraldton Iron Ore Alliance. All these projects, and any other future activities in the Mid West will require certainty and longevity of access to use equipment that generate signals within the proposed Band Plan, albeit at potentially compliant power levels, as well as potentially using equipment that could interfere with the operations of facilities within the MRO such as trains, cranes, vehicles and other electrical equipment along with bore fields, mills and other associated mining, processing and transport equipment.

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Chief Operating Office  
Sinosteel Midwest

17 December 2010
Initial Positioning and Requirements

According to information published on the Department of Mines and Petroleum (DMP) website, to facilitate this several zones were proposed or established at State and Commonwealth level to control emissions surrounding the core MRO site, with the DMP setting in place:

- **Mining Act Section 19 Exemption Areas:** Land surrounding the MRO site is prohibited for mining tenements through declaration of Section 19 Exemption Areas in accord with the *Mining Act 1978* (S19/158 and S19/157). No mining tenements may be applied for or granted in these zones. In addition no mining tenement is permitted within 30 km of the core of the facility to protect the ‘radio-quiet’ operations of the SKA.

- **70 km Radio Telescope Mineral Resource Management Area:** DMP has established a 70 km radius Radio Telescope Mineral Resource Management Area surrounding the MRO core. Tenements within this zone have a condition placed on them requiring the licensee or lessee to develop a management plan to ensure that radio frequency emissions from those activities will not interfere with the radio quiet requirements of the MRO. The approved plan is required to be included with any Programme of Work or Mining Proposal submitted for approval. This area is administered under the Mining Act and therefore only has jurisdiction over mining operations.

- **Potential 80 km Radio Telescope Mineral Resource Management Area:** 70-80 km annular band surrounding the MRO. If the proposed area is approved by the Minister for Mines and Petroleum it will be administered under the Mining Act and therefore will only have jurisdiction over mineral-resource-related activities.

During 2005 ACMA, with the support of the CSIRO, was in the final stages of implementing a number of “radio sensitive” zones, within which any “new radiocommunications activity triggers a process whereby the CSIRO can seek to have their needs considered (balanced with the needs of the radiocommunications users) when new radiocommunications transmitters are planned.”

In December 2005 ACMA issued its *A Radio Quiet Zone in Western Australia Discussion Paper* which acknowledged that “although the RQZ is located in a remote area of WA, some radiocommunications users may be adversely affected by its presence.” It also acknowledged that RQZs exist in other parts of the world such as around the Arecibo Observatory in Puerto Rico, where licensees must only make reasonable efforts to protect the Observatory from interference. The currently proposed Band Plan appears to be far more prescriptive and strict, with the onus of compliance with the 3rd party.

As a result of ACMA exploring ways it could assist in managing the potential interference issues that would come with an SKA sited in Australia, ACMA injected the thought that the creation of an RQZ required managing land use, as well as spectrum use. Subsequently State and Local government bodies were engaged on land use issues.

In the January 2006 ACMA *Discussion Paper* the continued stated intention was to “ensure that the community within the RQZ would be largely unaffected (i.e. they should still be able to avail themselves of additional and improved services that new radiocommunications facilities might provide), while providing users of radio astronomy facilities within the RQZ with a degree of certainty about terrestrial radio signals in the area,...”
It was also stated the “proposed RQZ would not apply to:

- Radiocommunications systems that operate in an itinerant fashion (e.g. surveyors, mobile crane operators, rail operations etc), or
- Existing transmitters authorised for use by apparatus licences,
- Transmitters whose use is authorised by spectrum or class licences within the 10CMhz to 25 GHz”

It was expected that the operators of MRO would need to contribute, as appropriate, to any additional expenses incurred by radiocommunications users who opt for use of alternative methods of information transport.

The initial intention when establishing the RQZ was clear:

“to provide adequate protection for radio astronomy within the radio astronomy park, whilst minimising the impost on potentially affected users of radiocommunications.”

Changes and Concessions over Time

In a letter to Dr Jim Limerick, the then Director General of the Department of Industry and Resources, dated 11 January 2007 and titled Relocation of Radio Astronomy Park Project it was acknowledged by Murchison Metals (part owners of Crosslands and OPR) and Midwest (acquired by SMC in 2008) at the time that the “need for a new location for the MRO project became apparent on the 24 November 2006 when CSIRO informed the State Government and the mining companies, that it henceforth required a seventy kilometre radio quiet zone around the project.” Subsequent to this point the miners “had been given to understand that the project required a twenty seven kilometre radio quiet zone.”

Several new sites were proposed on Boolardy Station, of which the preferred site was at least 70kms from the Weld Range, permitted a railway to pass to the west of Weld Range while maintaining a buffer of at least 60kms and predominantly 70kms from the centre of the new MRO site. It was stated the “railway will be a variation of the current northern route and will increase route length and hence capital and operating costs by 10%.” A cost currently absorbed by the miners. Furthermore it was acknowledged this was “the concession that the mining companies must make to facilitate a solution.”

At this point it was made clear the companies required an agreement with the Governments and other involved parties, that there would be no further changes to the MRO requirements and that –

- The location of the project would not change;
- The RQZ radius of the new site would not increase beyond the 70 kms; and that
- The radio emission requirements would not change.

Risks resulting from the Proposed Band Plan and Existing MoU

The issue for the three major projects in the vicinity of the MRO (SMC, OPR and Crosslands) is the interconnected nature of their projects and the resultant unique interdependence i.e. we all need to succeed to individually succeed.
The real and present risks the current proposed Band Plan and existing MoU presents to the establishment of the Mid West as a developing resources region are:

- SMC, OPR or Crosslands may be unable to find an appropriate, and ongoing compliant, solution/s for their projects, which in turn could result in the inability to obtain debt and or equity funding.

- A compliance solution may impose a substantial cost on one or all of the projects, impacting the feasibility of their development i.e. increasing capital and/or operational costs.

- Agreed technical solutions, or solutions which includes an acceptable level of interference, only obtain a licence valid for five years which is subject to a yearly renewal process – with no guarantee of continuity. This equals uncertainty. Appendix 1 provides a summary of the typical types of equipment and licences that could be required

- Bulk material movement operations, such as iron ore mining and transport, require continuity of operations to fulfil obligations under sales and supply chain agreements, and to achieve an acceptable level of equipment utilisation. For this to occur, at times quick and decisive action is required and it is likely to involve the speedy mobilisation of people and equipment at short notice for short periods. The needs to be a mechanism which allows timely, potentially within hours, approval of short term non-compliant activity – which is not addressed in the proposed Band Plan or MoU

- Other organisations considering exploration, production or related opportunities in the Mid West could be dissuaded due to restrictions – perceived or otherwise – which if developed could provide both direct benefit to the Region as well as erode some of the initial capital costs of our or other projects i.e. the more users of the rail and/or port could lead to a reduction in tariff charged to SMC

**Further Concerns regarding the current process**

ACMA’s role is to maximise the public benefit from the use of any spectrum – as detailed in their Spectrum Management Principle 1 – ‘allocate spectrum to the highest value use or uses’. They are bound to follow their principles and any review, formal or otherwise, of their decisions would look to validate the application of their principles. Given the clear statement in the proposed Band Plan and MoU that they believe the greatest economic benefit is to be derived from the MRO, other parties, including miners and infrastructure providers, would be unable to argue on the grounds of economic impact of any ACMA decision.

It is of concern that ACMA considers that the existing administrative arrangements comprising the Embargo 41 and Radiocommunications Assignment and Licensing Instructions (RALI) MS 32 are not adequate or appropriate, and are looking to extend the management of frequencies past that of just the spectrum to include class and apparatus licenses. This is despite no major impacts on current operations within the MRO.

In the Report on Reducing Regulatory Burdens on Business the Taskforce’s view on good regulatory process requires governments to apply the following six principles:

- Governments should not act to address ‘problems’ through regulation unless a case for action has been clearly established. This should include evaluating and explaining why existing measures are not sufficient to deal with the issue.
A range of feasible policy options — including self-regulatory and co-regulatory approaches — need to be assessed within a cost-benefit framework (including analysis of compliance costs and, where relevant, risk).

Only the option that generates the greatest net benefit for the community, taking into account all the impacts, should be adopted.

Effective guidance should be provided to regulators and regulated parties to ensure that the policy intent of the regulation is clear, as well as what is needed to be compliant.

Mechanisms such as sunset clauses or periodic reviews need to be built in to legislation to ensure that regulation remains relevant and effective over time.

There needs to be effective consultation with regulated parties at the key stages of regulation-making and administration.

The current process in achieving the implementation of the proposed Band Plan does none of the following:

- Addresses a clearly established problem.
- Provide a range of feasible policy options — including self-regulatory and co-regulatory approaches.
- Presents an option that generates the greatest net benefit for the community.
- Contain effective guidance.
- Contain mechanisms to ensure that regulation remains relevant and effective over time.
- Undertaken effective consultation.

In short the process fails to adhere to any of the principles.
Requirements

To secure SMC’s unconditional support for any further modification to existing management of spectrums in the vicinity of the MRO, SMC requires consideration be given to:

- ACMA comply with the principles of good policy development i.e. follow the six principles of ‘good regulatory process’.
- The current MoU between the Governments be redrafted to reflect the contents of the joint communiqué.
- The current ACMA Band Plan be redrafted to reflect the contents of the communiqué from the Governments, namely:
  - MRO as primary user of spectrum for a radius of up to 70km (instead of 100km), to ensure the railway and the currently proposed project are outside the RQZ;
  - Decreasing the 100km limit of the RQZ back to a previously agreed 70 KMs;
  - A zone between 70km and 150km (which will include the OPOR railway, Weld Range and Jack Hills mines) be established in which a level playing field for the mines and related infrastructure can be ensured, especially assessing the social impact;
  - Clear reference that temporary and or itinerant interference (e.g. surveyors, mobile crane operators, rail operations etc) be acknowledged as acceptable to allow for less restrictions during periods of construction and maintenance etc.
- A co-existence agreement be drafted between OPOR, the mines and the MRO which binds all parties to detail on how they will interact, including dispute resolution via an independent (non-ACMA) mechanism for the Band Plan and RALI.
- An independent assessment of the impact that any proposed Band Plan will have on other activities in the Region to allow for mutually-agreeable strategies developed cover areas such as:
  - Undertake a comprehensive and independent environmental, social and economic impact study to describe, evaluate and justify the radio quiet zone, assess its impacts and develop management strategies
  - Management and mitigation strategies should identify where costs and benefits accrue and how costs will be allocated.
  - The above study should incorporate community consultation including the mining and pastoral industry, indigenous communities and local government.
- A clear statement and agreement on the level of commercial protections from the Governments afforded to SMC and others against increased costs, direct or otherwise, resulting from changes to the law in this area, as well as the cost of current compliance.
- The current RALI remain in place outside 150km zone.
Appendix 1 - Summary of radiocommunications licensing in the Newman area (Whaleback mine, township, and airport)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Band</th>
<th>Count of licences</th>
<th>User(s)</th>
<th>Use</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>233 kHz</td>
<td>LF</td>
<td>1</td>
<td>Airservices Australia</td>
<td>Navigation aid</td>
<td>Below frequency limit of RALI MS32</td>
</tr>
<tr>
<td>567 kHz</td>
<td>MF</td>
<td>1</td>
<td>ABC</td>
<td>AM broadcasting</td>
<td>Below frequency limit of RALI MS32</td>
</tr>
<tr>
<td>3 - 30 MHz</td>
<td>HF</td>
<td>47</td>
<td>Police &amp; Emergency Services, Local shire, BHP Billiton mine</td>
<td>Mobile voice comms</td>
<td>Below frequency limit of RALI MS32</td>
</tr>
<tr>
<td>70 - 85 MHz</td>
<td>VHF Mid band</td>
<td>2</td>
<td>Emergency Services</td>
<td>Mobile voice comms</td>
<td>Within planned extension of RALI MS32</td>
</tr>
<tr>
<td>88 – 108 MHz</td>
<td>FM B/C</td>
<td>14</td>
<td>ABC, Commercial Radio, Community Radio, BHP Billiton</td>
<td>FM sound broadcasting</td>
<td>Within planned extension of RALI MS32</td>
</tr>
<tr>
<td>117.2 MHz</td>
<td>Aero</td>
<td>1</td>
<td>Airservices Australia</td>
<td>Navigation aid</td>
<td></td>
</tr>
<tr>
<td>118 – 137 MHz</td>
<td>Aero</td>
<td>7</td>
<td>Airservices Australia</td>
<td>Aircraft voice comms</td>
<td></td>
</tr>
<tr>
<td>148 – 149.5 MHz</td>
<td>Paging</td>
<td>2</td>
<td>Telstra, Newman Hospital</td>
<td>Paging services</td>
<td></td>
</tr>
<tr>
<td>150 – 175 MHz</td>
<td>VHF High band</td>
<td>98</td>
<td>Mine operators and contractors predominantly</td>
<td>Mobile voice comms</td>
<td>Some use by emergency services, shire and commercial business also</td>
</tr>
<tr>
<td>150/154 MHz</td>
<td>VHF High band</td>
<td>2</td>
<td>Telstra</td>
<td>Fixed links</td>
<td>Connections to remote subscribers</td>
</tr>
<tr>
<td>403 – 420 MHz</td>
<td>400 MHz</td>
<td>5</td>
<td>Telstra, St Johns Ambulance</td>
<td>Fixed links</td>
<td></td>
</tr>
<tr>
<td>450 – 470 MHz</td>
<td>400 MHz</td>
<td>19</td>
<td>BHP Billiton</td>
<td>Fixed links</td>
<td>Mine operations, railway, and telemetry use</td>
</tr>
<tr>
<td>450 – 520 MHz</td>
<td>400 MHz</td>
<td>90</td>
<td>Mine operators and contractors predominantly</td>
<td>Mobile voice comms</td>
<td>Some use by emergency services, shire and commercial business also</td>
</tr>
<tr>
<td>870 - 890 MHz</td>
<td>800 MHz PMTS</td>
<td>15</td>
<td>Telstra</td>
<td>Public mobile</td>
<td>Base stations only (mobiles at 825 - 845 MHz)</td>
</tr>
<tr>
<td>929 – 930 MHz</td>
<td>900 MHz</td>
<td>4</td>
<td>BHP Billiton</td>
<td>Telemetry</td>
<td>Mine operations ?</td>
</tr>
<tr>
<td>930 – 960 MHz</td>
<td>GSM 900</td>
<td>3</td>
<td>Telstra/Optus</td>
<td>Public mobile</td>
<td>Base stations only (mobiles at 890 - 920 MHz)</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>Type</td>
<td>Operator</td>
<td>Use</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>1260 MHz</td>
<td></td>
<td>Airservices Australia</td>
<td>Airport radar</td>
<td></td>
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<tr>
<td>1427 – 1535 MHz</td>
<td>1.5 GHz P-P</td>
<td>2 BHP Billiton</td>
<td>Fixed links</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mine operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1700 – 1900 MHz</td>
<td>1.8 GHz P-P</td>
<td>1 BHP Billiton</td>
<td>Fixed links</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Final hop of major microwave system from Hedland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1900 – 2300 MHz</td>
<td>2 GHz P-P</td>
<td>1 Telstra</td>
<td>Fixed links</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Backhaul for remote subscriber system (HCRC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2110 – 2170 MHz</td>
<td>2.1 GHz PMTS</td>
<td>6 Telstra</td>
<td>Public mobile</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Base stations only (mobiles at 1920 - 1980 MHz)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 GHz – 22 GHz</td>
<td>Microwave P-P</td>
<td>6 BHP Billiton (mine comms)</td>
<td>Broadband fixed links</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Various bands and bandwidths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.7 – 19.7 GHz</td>
<td>18 GHz P-P</td>
<td>5 Telstra</td>
<td>Broadband fixed links</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Backhaul of cell site traffic (?)</td>
<td></td>
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</table>

**Source of Data:** The ACMA public Register of Radiocommunications Licensing (RRL) October 2010.
Records extracted within a 20 km square centred on 780000 E, 7414000 N, Zone 50 (Datum AGD66).