South Australian Centre for Economic Studies

Automated Risk Monitoring (ARM): Adelaide Casino System

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Erratum

p. ii First line, It was not **impossible** should read It was not **possible**.
p. 27 Table 5.1, has been updated and replaced.
p. 28 Table 5.2, has been updated and replaced.

The SA Centre for Economic Studies of the University of Adelaide apologises for the errors that appeared in versions downloaded from the Independent Gambling Authority website prior to 17 January 2018.

Acknowledgement
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Executive Summary

The Independent Gambling Authority (IGA) is South Australia's senior regulator for commercial forms of gambling, including casino gambling, gaming machines in hotels and clubs, wagering on races and sports, and commercial lotteries.

Under changes to the *Casino Act 1997* (Act) commencing 1 January 2014, the Adelaide Casino (part of the Skycity Entertainment Group) was permitted to operate a cashless gaming system provided an automated risk monitoring (ARM) system and a pre-commitment system are also operational. This permission was granted in May 2014 and Adelaide Casino has since operated the ARM system.

The IGA commissioned SACES to review the extent to which the ARM system at Adelaide Casino is compliant with the 2014 agreement. Specifically, the study was asked to examine:

- how the Adelaide Casino uses its ARM system and whether its functionality is as originally intended and described;
- the relationship between the pre-commitment, cashless gaming and ARM systems;
- to what extent the ARM system is understood by relevant staff;
- the value of ARM to casino staff in identifying at-risk and potential problem gamblers;
- the characteristics of customers identified as demonstrating potential problem gambling behaviour, including their status of premium gaming customer;
- whether ARM has led to an increase in identification of at-risk and potential problem gamblers; and who, if anyone, displaying problematic gambling behaviour has not been identified by the ARM system; and
- data on alerts and alert actions, and response time.

Overview of the Automated Risk Monitoring System

The ARM system monitors length of play (i.e., 4 hour, 6-hour and 8-hour sessions) and to a lesser extent specific 'Hot Player' activity (i.e. turnover of $21,000 or $42,000 in 200 minutes) as a proxy for identifying potential problem gambling behaviour. The system is intended to serve as an 'early intervention' tool for detecting 'at-risk' and problematic gambling. Approaches to monitoring gambling behaviours include:

- Observing patrons and using checklists of problematic behaviours;
- Requirement to show personal identification (ID) on entry to a casino;
- Use of pre-commitment, cashless gaming, reward or loyalty cards to monitor gambling behaviours;
- Informing patron of their observed visitation and/or gambling behaviour to encourage self-assessment; and
- Using technology linked to gaming machines or tables to record bet volumes and/or time spent gambling (ARM systems).

The Automated Risk Monitoring (ARM) System at the Adelaide Casino

SACES examined the ARM system as it is currently operable at the Adelaide Casino. The system functionality was found, by and large, to comply with description provided in Skycity's system application and approved by the IGA, with some notable exceptions described below.

Adelaide Casino's ARM system is intended to complement other customer services that were put in place to help support intervention and customer engagement with staff. The service goals include:

- customer services approach with a target of 1,000 staff/customer contacts each month, to support responsible gaming;
- customer service approach with a target of 500 staff/customer contacts each month in the bar areas to support the responsible service of alcohol; and
- sequential, escalating approach to intervention with respect to problem gambling that starts with initial contact, follow-up, to case management over 3 months and an on-going maintenance intervention program.

Operation of the ARM system at the Adelaide Casino

The ARM system emails alerts to the Gaming Machine Supervisor and to Host Responsibility staff at the Adelaide Casino if a patron has spent four hours playing without interruption (defined as more than 10 minutes of not placing a bet) at an Electronic Gaming Machine (EGM) or an automated table game.

Since the introduction of the ARM system, the Casino has modified the system by adding alerts, analysing alerts and refining referral and follow up responses. These have included the introduction of an additional 6-hour alert from January 2016[1], which was followed by the integration of already existing 8-hours alerts into the ARM system from September 2016. This resulted in greater response efficiency as these higher-level alerts became more immediately identifiable and concurrently host responsibility staff were put in sole charge of responding to these alerts.

In addition to these time-based alerts, the ARM system issues 'hot player' alerts, which are based on a player's accumulated bet volume over a specified time.

Hot Player alerts are triggered if a patron has turned over $21,000 or $42,000 in 200 minutes, assuming a loss of $2,100 or $4,200 respectively at 10 per cent theoretical casino hold. The latter threshold applies to "identifiable players" who use loyalty cards in the device, the former to "non-identifiable players" who do not have a card or choose not use it. Non-identifiable players can only be monitored at a single device and, hence, the lower 'hot player' alert threshold applies.

Automatic tracking of identifiable players across multiple sessions of play across a specified time span is currently not in use at the Adelaide Casino. Instead, manual *desktop reviews* are undertaken to compare and sum discrete play sessions at different devices.

Four-hour alerts are initially received by the Gaming Machine Supervisor who assigns a Gaming Machine Attendant to observe the patron who triggered the alert. If the Attendant is concerned about the patron's gambling behaviour, the Host Responsibility team is informed and a Host Responsibility Coordinator (HRC) takes over. HRC routinely attend to 6-hour, 8-hour and 'hot player' alerts.

Pre-Commitment

Pre-commitment play is monitored in parallel with the ARM system as both systems operate independently from another, as explained in the Skycity application.

Relationship between Pre-commitment, cashless gaming and ARM

The Adelaide Casino facilitates both cashless and cash-based gaming at its EGM and its automated and semi-automated table games. Non-automated table games, in contrast, require the patron to buy chips for play, which means they essentially remain non-identifiable players. However, patrons may request using loyalty cards with which to collect reward points.

The ARM system uses these cards to collect data on bet volumes and play duration. In November 2016, Adelaide Casino reported 112,719 loyalty cards registered since December 1985. In addition, the Casino had issued 89,705 anonymous gaming cards (the *Ezycard)* issued since their introduction in 2014. The majority of Loyalty Cards are of the entry level 'Sapphire" type (47 percent), which is open to every customer provided he or she is not barred or known to have a history of problem gambling. Patrons may swipe their card at table games as well as EGM if they wish to collect reward points, but this is not a requirement.

By March 2017, 691 loyalty card or *Ezycard* users have had pre-commitments logged with the Adelaide Casino. Pre-commitment was introduced at the Casino in February 2014 and limits remain in place until the players choose to change or remove them.

It was not possible to analyse how pre-commitment, cashless gaming and the ARM system are connected now or have been connected over time. This is because pre-commitment is monitored separately from the ARM system and, in the case of pre-commitment, only the records of current 'live' cases are kept.

Data on pre-commitment limits currently in place suggest that they are often used by players who wish to spend less time or money gaming than would trigger an ARM system alert. Whilst thus possibly complementary to the ARM system, pre-commitment is not a widely used instrument amongst patron. There have also been few pre-commitment breaches; the highest number recorded in any month to date was 25 in August 2016.

[1] Six-hour alerts were introduced to free HRC staff from attending to an increasing number of 4-hour alerts not considered to be problematic. These alerts now remain the responsibility of GMA/GMS staff.

'Hot player' alerts

'Hot players' account for a small number of overall alerts, but, unlike other risk alerts, 'hot player' alerts are often triggered by *EzyCard users* or players using cash who are anonymous and, for this reason, difficult to observe or monitor.

Casino staff understanding and valuing of ARM

Several meetings were held with the Casino's HRM and HRCs, including shadowing an HRC on duty. The meetings confirmed that:

- host responsibility staff receive specialist training in skills critical for identifying and responding to problem gambling risks;
- host responsibility staff are familiar with the ARM system and utilise it effectively;
- host Responsibility Coordinators see the main benefit of ARM in helping them to recognise (more) players of potential interest. The ARM system is seen as a helping "tool" but not a substitute for 'walking the floor';
- staff are aware that the ARM system only works with EGMs and fully automated table games, but not on regular table games, where extra staff are employed to assist with identifying problem gambling; and
- desktop reviews are a further integral part of detecting problem gambling risks.

Adelaide Casino *Customer Service Approach*

Since before the introduction of the ARM system, Adelaide Casino has operated a risk detection and minimization strategy, which had been the main plank of its Customer Service Approach until the arrival of the ARM system. Its aim has been to engage with 1000 gambling customers to promote responsible gambling (Responsible Gambling Approaches, RGA) and 500 bar customers to promote responsible consumption of alcohol (Responsible Serving of Alcohol, RSA) each month.

Between January 2014 and December 2016, the Casino met its RGA target in nine of the 36 months, and its RSA target in 11 of the 36 months. Targets were met mostly before (RSA) or around (RGA) the time of the introduction of the ARM system. It is unclear why targets have rarely been met since then, but it is conceivable that an increased workload of the host responsibility team now also responsible for the ARM system has contributed to it. Adelaide Casino dealt with about 5,000 risk or 'hot player' alerts in both 2015 and 2016.

Effectiveness of alert thresholds

HRC staff felt that current alert thresholds were working, but stressed that each alert situation still required additional, player-specific information before a gambling risk assessment could be made. Player observation, intervention (i.e. approaching a player in conversation), obtaining additional information from other Casino staff (e.g. premium player hosts) familiar with individual players and desktop reviews all formed part of the risk assessment process.

HRC staff did not deem the inability of the ARM system to capture multiple sessions of play across the specified time span problematic, since they found EGM players to rarely change machines.

Evidence of link between alerts and premium gaming

Risk and 'hot player' alerts were disproportionately triggered by players using Platinum or Diamond loyalty cards, which account for about five per cent of all cards issued or re-issued by the Casino between 1985 and November 2016. In 2016 alone, Platinum or Diamond card holders triggered:

- 83 percent of 4-hour alerts;
- 71 per cent of 6-hour alerts;
- 68 per cent of 8-hour alerts; and
- 36 percent of 'hot player' alerts.

The IGA expressed interest in exploring any potential sequential link between triggering a risk alert and becoming a premium player. It was not possible to examine this aspect of gambling and gambling behaviour. This was because player card data and ARM system data are kept on separate platforms, and individual players cannot be tracked over time and across systems

Characteristics of customers identified with potential problem gambling behaviour

The Adelaide Casino ARM system monitors money and time spent on gambling, which define problem gambling. It does not store personal data on gamblers, although some details are kept on players in case management or barred from the Casino. Host responsibility staff gain knowledge of the characteristics of problem gamblers 'on the job' rather than through the analysis of available data.

Host responsibility staff observed that, increasingly, younger male players, especially those active on table games, were seeking advice or help with their gambling behaviour, including requesting to be barred. In contrast, EGM users (regardless of age) appeared less likely to self-identify with problem gambling issues, which made the ARM system an important as well as effective tool for detecting problem gambling especially in EGM area.

Change in identification of at-risk and potential problem gamblers

Host responsibility staff did not feel that the ARM system had led to an increase in the detection of at-risk and potential problem gamblers, although risk and 'hot player' alerts were making staff more aware of 'high stake' individual players. Casino data on the number of patrons barred or in case management suggest a decreasing trend since before the introduction of the ARM system.

Data on alerts and alert actions, and response time

Data on Adelaide Casino visitations, ARM system alerts and HRC actions between July 2014 and March 2017 show a steady volume of visitations, ranging from a low of 121,535 in December 2014 to a high of 163,582 in December 2016.

ARM system alerts, on the other hand, have decreased over time, with the steepest decrease occurring in the nine months to April 2015. Analysis of alerts data is complicated by data for 2014 appearing out of line of subsequent years, possibly as a result of continued bedding-in issues. In addition, alerts data are affected by double-counting as 4-hour alerts also include counts of 8-hour alerts (one 8-hour alert = two 4-hour alerts). Since 8-hour alerts have only been *separately* identified since their integration into the ARM system from September 2016, it is not possible to correct for these multiple counts consistently over time.

Trend analysis of 4-hour alerts (which include 8-hour alerts) shows a steady decrease in alerts until about the middle of 2016, when they started to increase again by a small margin. The introduction of 6-hours alerts in January 2016 naturally increased the total number of alerts. Since early 2017, the now separately recorded 8-hour alerts decreased in frequency, just as the number of 6-hour alerts increased. This may suggest that 6-hour alerts serve or can serve as an 'early intervention tool' reducing the prevalence of longer period of Casino play and, thus, the occurrence of 8-hour alerts. However, further monitoring data would be required to test this assumption.

Links between alert, customer engagement and other outcomes

ARM risk alerts require Gaming Machine Attendants or HRC to attend to incidents. If concerned, HRC then engage with the patron to assess the risk of problem gambling in conversation. ARM system data logs confirm that, on average, each alert was followed up with an 'action' that as a minimum involved observation ('attending' the gaming area). The majority of 4-hour alerts were followed up with observation only, without incidents being escalated to an HRC who would then approach and talk with the patron ('intervention').

In October 2015, desktop reviews were introduced as an additional tool, which led to an increase in follow-up actions. Desktop reviews involve HRC consulting ARM records on logged player behaviour and/or other players records, such as on barring, to inform their assessment of problem gambling risks. Whilst initially used for all alerts, desktop reviews are no longer routinely conducted in response to 4-hour alerts, but remain an option if there is concern about a player's behaviour. In 2016, about one in ten 4-hours alerts involved HRC staff, i.e. had been escalated up by Gaming Machine Attendants after an initial observation. By comparison, about one in three 6-hour alerts and four in ten 8-hour alerts, both routinely the responsibility of HRC staff, resulted in HRC approaching a patron after first observing their behaviour in the gaming area.

Time lapse between alert response stages

Risk alert response times monitored by the Casino on six occasions for the purpose of this study revealed a degree of variability, with 4-hour alerts typically taken longer to respond to (average: 13 and 26 minutes during two periods of measurement), compared with about 10 minutes for 6-hour and 8-hour alerts.

The Skycity application specified an average response time of "between 5 and 15 minutes". These times were not met in a number of instances observed during this test. In addition, a notable number of 4-hour alerts and some 8-hour alerts appeared not to have had been attended to, or had no actions recorded.

The ARM system does not currently record actions taken by HRC in response to 'hot player' alerts and response times could, hence, not be examined for this type of alert.

Summary assessment

SACES's review of the Adelaide Casino current implementation of the ARM system finds that it is generally in compliance with the specifications and conditions outlined in the Skycity application for approval dated 29 April 2014.

Current operations of the ARM system at the Adelaide also exceed and improve on the original specification following the introduction of 6-hour alerts and the integration of pre-existing 8-hour alerts into the ARM system. Desktop reviews are also an additional feature not part of the original specification.

Functionality

The ARM system at the Adelaide Casino was originally designed and intended for identifying 4-hour and 'hot player' gaming.

We find that:

- the introduction of 6-hour alerts and the integration of 8-hour alerts into the ARM system appear warranted and increase response efficiency, with few 4-hour alerts being escalated from Gaming Machine Attendants to Host Responsibility Co-ordinators, allowing the latter to focus on higher order alerts;
- most alerts are followed with at least one action and, since the introduction of desktop reviews in October 2015, two actions;
- however, response time test also found the number of alerts that did not receive any follow up; and
- response times to alerts varied substantially, but for at least half of all logged alerts remained within the stipulated 5-15 minute response range.

The actions taken in response to 'hot players' alerts are currently not being logged. This is of concern also because a large proportion of 'hot player' alerts are caused by anonymous players who may also remain non-identifiable, unless their alerts are followed up and corresponding actions are logged.

Effectiveness

The ARM system serves, as intended, as an additional tool for identifying problem gambling. The recording of alerts and actions has produced new means for monitoring player behaviour.

The ARM system is managed effectively by the Casino's host responsibility team, building on a well-defined division of alert action responsibilities. Staff have a good understanding of the ARM system's functionality, role, potential and, importantly, also its limitations.

Capacity to detect problem gambling

There is as yet no evidence that the ARM system has led to an increase in identification of at-risk and potential problem gamblers, either in the judgement of host responsibility staff or as recorded in the barring or case management data collected by the Casino. However, statistical analysis highlighted a recent divergence in 6-hur and 8-hour alerts. It is too early to say whether these two movements are connected, in that an increase in 6-hour alerts is reducing the number of players going on to play until the 8-hour alert is triggered.

ARM system and Customer Services Approach

SACES notes that operating the ARM system has coincided with a reduction in other customer service activities, namely the Casino's Responsible Gambling Approach (RGA) and Responsible Serving of Alcohol (RSA) customer service activities. Targets with respect to these activities have become less likely to be met since the introduction of the ARM system. This may be due to an increased workload as the ARM system has created an additional 300-500 alerts per month, many of which would have required customer contact, including by host responsibility staff.

Pre-commitment

The ARM system and the separate pre-commitment system appear to be complementary, if separate systems, with pre-commitment capturing lower-stake players who would like to limit their play time or bet volume, whilst the ARM system covers players spending more time or placing higher or more bets. Pre-commitment, however, is voluntary and not widely used. This may reduce its effectiveness as a tool for monitoring lower stake play.

Recommendations

Whilst the review concludes that Adelaide Casino's implementation of the ARM system is principally compliant with original specifications, SACES recommends measures to improve operations, namely:

- ensuring that appropriate Casino staff attend all alerts, especially 8-hours alerts, and that all actions, including those in response to 'hot player' alerts, are logged;
- examining why not all alerts have actions logged against them, and why some response times to alerts are outside the stipulated range, and taking corrected action;
- enhancing existing ARM system data and data use further to facilitate the early detection of problem gambling; and
- exploring if staffing levels or commitments are supportive of the objective of meeting customer service approach targets, of ensuring all ARM alerts receive a response, and of achieving response times within the agreed 5-15 minute range.

SACES believes that the ARM system has created data that could help to improve the understanding of the nature and risk of problem gambling. This could be achieved by:

- recording and analysing time spent gambling and players buy in/drop (i.e. money spent) for both risk and 'hot player' alerts, and examining how the two gambling risk indicators are related;
- linking barring information to the ARM system (as noted in the Skycity application); and
- automated linking of alerts to person files (e.g. where a player had previously been case managed).

1. Introduction

Background to Study

- The Independent Gambling Authority monitoring requirement for cashless gambling at Adelaide Casino;
- Overview of approaches to monitoring of at-risk and problem gambling;
- Automated risk monitoring at Adelaide Casino;
- Study Terms of Reference.

1.1 Background to the study

The Independent Gambling Authority (Authority) is South Australia's senior regulator for commercial forms of gambling. These include casino gambling, gaming machines in hotels and clubs, wagering on races and sports, and commercial lotteries. The Authority exercises functions and powers under the legislation relevant to these forms of gambling, as well as under the *Independent Gambling Authority Act 1995*.

Under changes to the *Casino Act 1997* (Act) commencing 1 January 2014, the Adelaide Casino (part of the Skycity Entertainment Group) was permitted to operate a cashless gaming system provided an automated risk monitoring system and a pre-commitment system are also operational. There was also the stipulation that arrangements for cashless gaming and the automated risk monitoring system had to be recognised and approved by the Authority.

The *Casino Act 1997* (Act) provided for the Authority to prescribe criteria for recognition of an automated risk monitoring system. The Authority prescribed the criteria in the *Gambling Regulation—Systems Criteria—Prescription Notice 2013* (Prescription Notice). On 1 May 2014 the Authority's recognition of Adelaide Casino's automated risk monitoring system was published in the Government gazette. Skycity Adelaide's application for recognition of the system forms part of the recognition[2]. Adelaide Casino's automated risk monitoring system has been operational since May 2014, with system testing occurring before that date.

Relevant to this study, part of the system recognition was an undertaking by Skycity Adelaide to assist with an official research project. Clause 3 of the undertaking states − Skycity undertakes that it will co-operate in the conduct of any official research project − (a) generally; (b) by consenting to the use of data reasonably required by the principal investigator; and (c) by changing its privacy policies, and procuring changes to any relevant third parties' privacy policies, as is reasonably required by the principal investigator.

1.2 Overview of automated systems, cards, data analysis

1.2.1 Review of International Automated Risk Monitoring Interventions

An ARM system monitors gamblers play data to identify potential problem gambling behaviour. In a review of best practice to prevent problem gambling Williams et al.[3] (2012) considered the range of pro-active interventions with 'at-risk' and problem gamblers as practiced by casinos throughout the world. The authors documented a range of interventions and system practices that relied on automated systems and/or mandated systems for intervention.

The most important consideration with respect to 'early intervention' and systems that enable the early detection of 'at-risk' and problematic gambling participation and behaviours, is that it is likely to be less costly and more effective to intervene early and reduce the incidence of problematic behaviours than "treatment and rehabilitation of established gambling problems" (Williams et.al., 2012, p. 70). It also has the potential benefit of intervening with those gamblers who are in the process of, or who have committed illegal activities, to fund their gambling behaviours (e.g. well documented cases of on-going fraud to fund gambling participation). Overall, the benefits of monitoring gambling behaviours by the provider to facilitate early intervention are well documented.

[2] A copy of Skycity Adelaide's application is available at Appendix B.
[3] Williams, R.J., West, B.L., & Simpson, R.I. *Prevention of Problem Gambling: A Comprehensive Review of the Evidence, and Identified Best Practices. (2012)*

1.2.2 Use of checklists

Australian and international casinos train staff to observe patrons and to refer to a checklist of problematic behaviours associated with 'at-risk' or problem gambling. Behavioural checklists have continued to be developed over time (see the list prepared by Delfabbro et al. for Grambling Research Australia in Appendix A).

Williams et al. (2012) reviewed staff training for employees of casinos in Switzerland noting that staff use the checklists to detect patrons who are likely experiencing problems with gambling as in other casinos worldwide. Unlike many other casinos there is a mandated requirement that states employees of casinos in Switzerland "*are obliged"* to approach patrons and there is an assessment process to determine whether a ban or a voluntary or involuntary visit limitation is imposed.

1.2.3 Use of personal ID: visitation frequency

Several countries, most notably the Netherlands, require a patron to show personal identification (ID) in order to enter a casino and this is then used to track the frequency of casino visitations. The ability to track a patron by frequency of visitation against default criteria set by the casino provide the ability to approach a patron with high visitation behaviour. Williams et al. (2012, p. 69) inform that either a change in the pattern of visitation and/or 20 visits a month over three consecutive months provide a red flag for a person to be "*automatically approached* to see whether they would like to sign a visit limitation or self-exclusion contract." There is evidence to support the effectiveness of this form of intervention, including that the Netherlands has one of the world's lowest rates of problem gambling and that the number of problem gamblers using help services has declined significantly since 1995.

A similar system to gain entry into casinos is used in Austria so that both frequency and duration of attendance are recorded. The default indicator used is attendance set to visiting a casino in 90 days or more in a 180 day period. A patron whose attendance is above the threshold will receive a letter referring to problematic gambling behaviour and their personal ID is invalidated. This process can escalate to a longer ban and then a lifetime ban.

Some club based casinos in the UK require a patron to show personal ID at the front desk on entering the premises and this is verified against personal data and a photograph of the patron. There is also a facility to link the ID to self and venue based exclusions programs.

1.2.4 Analysis of personal card, reward/loyalty card

Cards for pre-commitment, cashless gaming, reward and loyalty cards whether the person is identified or non-identified (and uses their card) provide a capacity to interrogate gambling patterns and behaviours and hence support intervention. The use of a card provides information on frequency of use of the card (i.e. visit), length of play, volume of bets and 'hot or risky play'. Data on these variables provides for staff observation and intervention. It is reported by regulators of casinos using such systems and by independent researchers[4] "that these interactions have a significant effect on reducing player risk levels" (Williams et al., 2012, p. 69).

Ontario Lottery & Gaming Corporation uses data analysis to write to individual patrons outlining their gambling participation, to provide a means for the individual to effectively conduct a form of self-assessment. The impacts of this approach were generally assessed as being positive for the individual patrons as reported by Williams et al. (2012).

In some jurisdictions the use and analysis of player data such as expenditure per session and frequency of visitation is mandatory (New Zealand) in order that the casino can conduct staff interventions including banning from the casino. Skycity (NZ) tracks an individual who "visits the casino at least 5 times a week and spends more than $300 on EGM machines per session, or visits at least twice a week and spends at least $500 a session" (Williams et al., 2012, p. 70). Above these limits the patron is considered to be 'at-risk' or a problem gambler and must be excluded unless otherwise determined to be in control.

A system called Playscan is used in Sweden to monitor on-line gambling where a player will receive notification if the pattern of gambling is above specified statistical default alert limits and in the range of problem gambling. Evaluations generally support improvements in gambling behaviours including less play.

Conclusion. It appears that automatic risk based systems provide information to casino staff and the capacity for early intervention to occur in the casino or through direct letter/emailed communication to a patron. In some cases the systems facilitate banning or exclusion from a casino. Williams et al. (2012) conclude that while

[4] Saskatchewan Gaming Corporation, Schellenick, T and Schrans, T, Ontario Problem Gambling Research Centre.

most of the interventions are 'educational in nature' the real benefits are enabling of proactive, early intervention which is less costly than treatment and rehabilitation of established gambling problems.

1.3 Automated Risk Monitoring (ARM) System in South Australia

ARM systems recognised in South Australia are not intended to definitively identify at risk or problem gamblers. An automated risk monitoring system is an additional tool to assist gaming staff to identify customers who may need closer monitoring or direct staff involvement.

Automated risk monitoring in South Australia is conducted in relation to all casino customers who gamble whether they are identifiable (i.e. use a card that is linked to their play) or are non-identifiable (i.e. play without any card). When a customer reaches a certain threshold of play as determined by Adelaide Casino or by the individual with respect to pre-commitment limits, the ARM system sends an alert to a staff member. A procedure is then followed that escalates the alert through various staff levels dependent on the outcome of each stage of the alert. The final staff level is the casino's Host Responsibility Department (HRD), which comprises the Host Responsibility Manager (HRM) and several Host Responsibility Co-ordinators (HRC). The operating procedures of the system are more fully described in **Chapter 2.**

1.4 Terms of reference

The South Australian Independent Gambling Authority (Authority) provided the researchers with the Terms of Reference for the study with the principal purpose "to undertake a study about the Adelaide Casino's automated risk monitoring system".

The Authority provided the following broad themes and research questions to be covered in the study:

In identifying how the Adelaide Casino uses its ARM system, using both quantitative and qualitative data, the following research questions should guide the overall study:

- describe the ARM system step by step, identifying any differences in relation to gaming machine and automated table game play—
    - operational—how does the system work (for example: what data is monitored, what types of alerts are triggered and what are the triggers, what are the steps in the alert process from triggering to conclusion, how long does each step take, who (staff position) has what responsibility in the alert process); and
    - identify and explain any differences between the intended system functionality described in Skycity Adelaide's system application and the system's current operation;
- describe the relationship between the pre-commitment, cashless gaming and ARM systems;
- what role does pre-commitment have in relation to ARM (e.g. pre-commitment involves customers setting their own limits on their play, and so, do breaches of pre-commitment limits inform ARM alerts);
- to what extent is the ARM system clearly understood by relevant staff with regard to: the intention of automated risk monitoring, its role in staff's everyday duties, and who has responsibilities in relation to the various stages of the alert and response process;
- what is the value of ARM to casino staff in identifying at-risk and potential problem gamblers;
- are any customers being identified by casino staff as demonstrating potential problem gambling behaviour who have not had an alert generated by the ARM system—if so, why (e.g. ARM thresholds too high; identification is not based on the parameters used for an ARM alert);
- have any customers for which an ARM alert has been generated, become a premium gaming customer since the alert was generated;
- are there any common characteristics of the customers being identified (e.g. demographically, casino membership status, type of gambling);
- has ARM led to an increase in identification of at-risk and potential problem gamblers;
- provide data about—
    - number and types of alerts generated;
    - what level have alerts reached in the response process, is there any difference between the alert types in the level reached, and the number of alerts resulting in an engagement with the customer;

  - time lapse between each of the alert response stages (i.e. alert to customer engagement); and
  - any other relevant aspects; and
- any other matters of relevance that become apparent during the conduct of the research study.

The Authority seeks two waves of qualitative and quantitative data collection—

- Wave 1 is for the data period beginning from the date the ARM system became operational until the date of commencement of the project; and
- Wave 2 two is for a period of twelve months, commencing from the conclusion of the wave one data period.

The SA Centre for Economic Studies (SACES) was required to submit a detailed project plan setting out how it would undertake the study, provide progress reports and draft reports at various stages of the study incorporating quantitative data from Waves 1 and 2, provide a draft final report for peer review and a final report. Subsequent developments have required changes to the original data analysis and reporting format, resulting in the delivery of one final report only. Furthermore, following delays to the start of the study, almost all monitoring data were available on study commencement and were analysed concurrently rather than, as originally intended, consecutively.

2. Describe the ARM System and How it Operates

TOR 1 What is the system and how does it operate

Identify how the Adelaide Casino uses its automated risk monitoring (ARM) system in particular to:

- **describe the ARM system step by step, identifying any differences in relation to gaming machine and automated table game play—**
  - **how does the system work (for example: what data is monitored, what types of alerts are triggered and what are the triggers, what are the steps in the alert process from triggering to conclusion, how long does each step take, who (staff position) has what responsibility in the alert process);**
  - **identify and explain any differences between the intended system functionality described in Skycity Adelaide's system application and the system's current operation; and**
  - **provide data about the system of alerts and responses to alert (covered in later Chapter).**

The description of the ARM system at the Adelaide Casino in this chapter has drawn on conversations with host responsibility staff and observations of the ARM system operation to the extent that player privacy and commercial confidentiality permitted us to do so. SACES also referred to Skycity's application for the approval of the ARM system (reproduced in Appendix B) for comparisons between intended and actual design and operations. In light of our conversations and observations, we conclude that the ARM system as it is currently operable at the Adelaide Casino reflects, by and large, the system functionality as described in Skycity's system application. Deviations from the original outline of processes mark efforts to streamline responsibilities of staff and thus to improve the efficient delivery of the monitoring system.

2.1 Description of Automated Risk Monitoring (ARM) System

The Adelaide Casino ARM system is an additional harm minimisation tool, as stated in the Skycity application (Appendix B, p.4[5]), to be used as an adjunct to the Adelaide Casino Host Responsibility Program. The ARM system assists in the identification and management of potential problem gambling behaviour by using a Live Floor View functionality to provide real time alerting by device, based on predetermined system default limits. The system attaches to the Casino Marketplace (CMP), which records the length of identifiable players' sessions, and the Slot Data System (SDS), which records device-specific bet volumes for identifiable and non-identifiable players. Via the SDS, the ARM system triggers "'hot player'" alerts, while via the CMP it triggers "Risk Alerts". Figure 2.1 illustrates the relationship between the CMP and SDS subsystems, and the hardware and software components integrated, as also noted in the Skycity application, via the iVISTA communication hub (Appendix B, p. 5). The Bally Live Floor View taps into these resources to generate real time alerts of pre-specified gaming patterns (as is further explained below) that may indicate at risk or problematic gambling behaviours.

The ARM system is a system to complement other customer services provided within the casino that are designed for early intervention and customer engagement with staff. It provides alerts within the range of 300-500 per month. **Chapter 5** reviews alerts in detail.

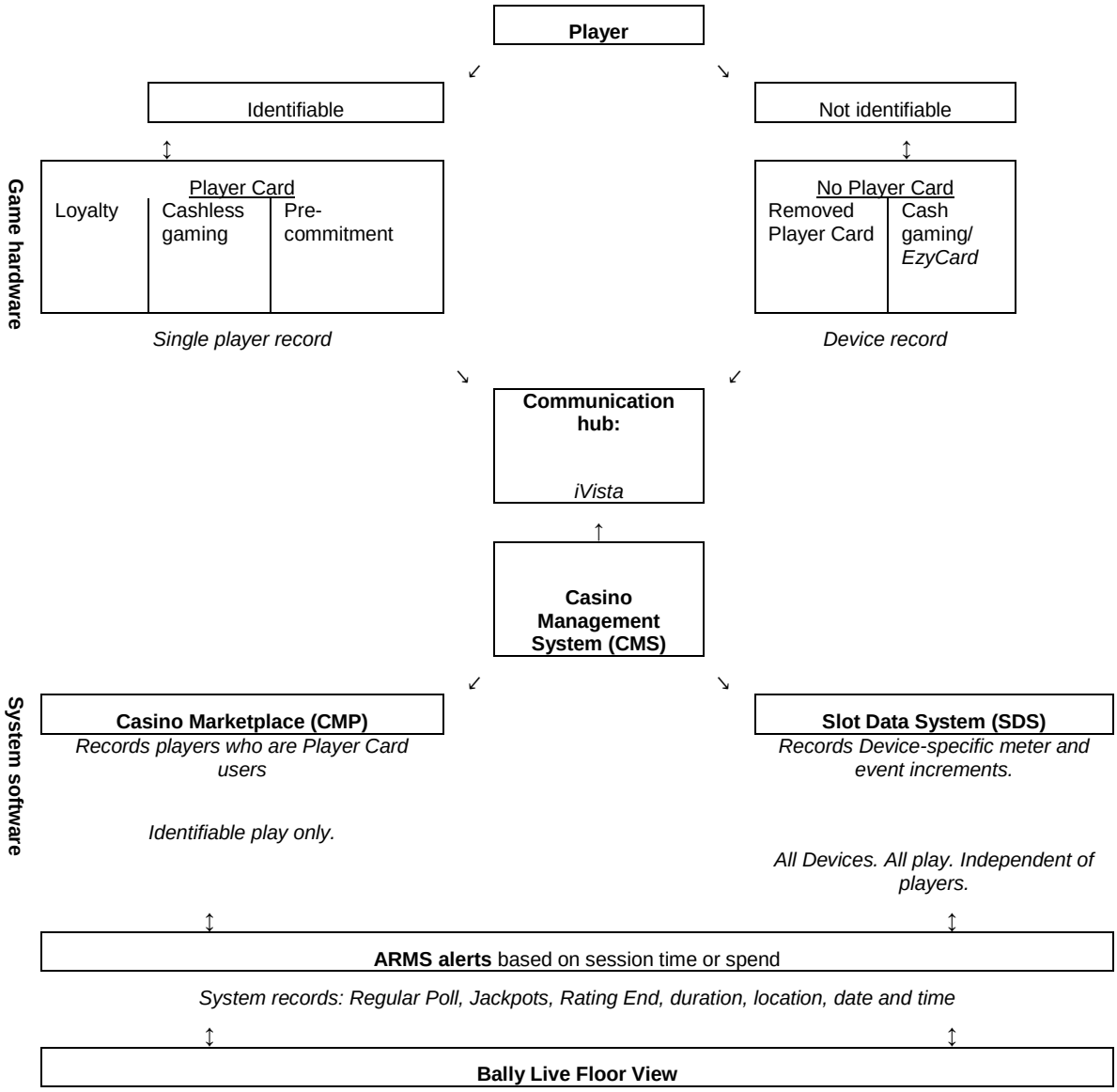
The Adelaide Casino has in place since 2007/08 customer support intervention that include the following:

- customer services approach with a target of 1,000 staff/customer contacts each month, to support responsible gaming;
- customer service approach with a target of 500 staff/customer contacts each month in the bar areas to support the responsible service of alcohol; and
- a sequential, escalating approach to intervention with respect to problem gambling that starts with initial contact, follow-up, to case management over 3 months and an on-going maintenance intervention program.

Staff training, the knowledge of staff accumulated over the length of time in employment, observational skills with respect to indicators of gambling behaviours and knowledge of individual customers are vitally important in any intervention process and identification of problematic behaviours. Staff training is currently provided internally and externally with the involvement of specialist trainers. The training programs are geared towards meeting role-specific needs of Casino staff, especially with regard to their engagement with customers.

[5] Page numbers cited in relation to the Skycity application included in Appendix B refer to the application's original page numbering, which may not correspond to the numbering applied to this report.

Figure 2.1 Overview of Game Hardware and System Software Sub-Systems at the Adelaide Casino



Relevant definitions to understand the ARM system include the following:

A Risk Alert: an event which monitors and subsequently alerts on the length of a player session based on the amount of time a player card is inserted at a device (i.e. an approved automated table game or an approved electronic gaming machine or EGM).

CMS and CMP: CMS is the overall Casino Management System while the CMP is a sub-system primarily focused on player accounts and related details. The CMP associates play at a device level with individual players who use player cards, and calculates information such as account balances, loyalty points and stores Player Ratings to be used by the pre-commitment system (as applicable).

SDS: Slot Data System (a sub-system of the Bally CMS) which records all device-specific meter and event increments and is the basis of raw revenue reporting for electronic gaming.

Live Floor View (LFV): is a sub-system of the CMS used for reporting, highlighting and alerting on current play or players.

A Player Card: a card issued by the Casino to a player for use in connections with gambling on a device. The definitions includes all player cards which may be enabled for the purposes of account based cashless gaming play as well as for Casino Loyalty Program and voluntary pre-commitment.

Anonymous Card: a player card linked to a numbered player account, with no associated personal details.

> **Hot Player:** an event which monitors and alerts on bet volume within a specified time frame where alerts are triggered by pre-configured threshold values that define that a device as being heavily played.

The system differentiates between an **"identifiable player"** and a **"non-identifiable player."** An identifiable player is one who inserts or uses his or her card in the device where the card may be used for cashless gaming play as well as for Casino Loyalty Program and voluntary pre-commitment. The card provides for single player record while the card may be used for dual purposes (e.g. cashless gaming and pre-commitment). Players may be using the Adelaide Casino's anonymous *Ezycard*, which is not linked to a player's personal details, but identifies play through an account number associated with each card. This is compliant with Clause 6(1)(a) of the Skycity application (Appendix B).

A non-identifiable player is one who either does not have a card or chooses not to insert his or her card into any device (or removes their card) at the time of play.

When a player inserts a player card into a device the play recorded in CMP will rely on the recognition of the player Card-in and Card-out messages, which identify the beginning and end of a session of play and generate ARM alerts based on session time and spend.

Adelaide Casino uses live floor view to configure ARM system thresholds according to the length of a player session (identifiable) or bet volume (turnover) within a specified time (identifiable and non-identifiable player) to apply to a device session. When a 'potentially at risk' threshold is reached, an email ARM alert will be generated and sent to the Alerts Officer on duty.

Live floor view is capable of monitoring play against generic, default system criteria set by Adelaide Casino. LFV collates gaming activity from each device and allows for both the visual representation of the data in real-time, and the generation of email alerts. It does this by drawing on relevant information from CMP and SDS, while applying its own configurable filters and logic to the data. These alerts are based on system-wide configuration. There is no ability in the existing system to tailor alerts to specific areas or individuals beyond whether a player is identifiable.

Different ARM system thresholds for identifiable and non-identifiable spend are able to be configured in the system and are utilised by the casino. Because non-identifiable player alerts only relate to a single device session, the default ARM spend threshold will be lower than an identifiable player spend threshold. The ARM threshold for identifiable play is, in principle, configurable to include multiple sessions of play across the specified time span. However this system is currently not automated at the Adelaide Casino. HRM and HRC can undertake manual Desktop Reviews that display and aggregate an identifiable player's playing sessions across devices during a specified time period. This was explained in Skycity's application under Clause 6(2)(b) (Appendix B).

2.1.1 Alerts under Automatic Risk Monitoring

The generic process of alert handling as described in the Skycity application is for:

- ARM system alerts to be emailed to the on duty Alerts Officer of which there are 4 Gaming Machine Supervisors (GMS) at the Adelaide Casino;
- upon receipt of the alert the Alerts Officer will allocate the alert to an appropriately trained staff member, there are 47 front line gaming machine staff in the area where the device is located, who will attend the device and observe the player; and
- following observation, the staff member will sign off on the ARM system alert, or
- escalate it to a Host Responsibility Coordinator (HRC).

This is the approach still in place for 4-hour alerts. However, since January 2016, an additional 6-hour alert was introduced, which, in turn, was followed by the integration of already existing 8-hours alerts into the ARM system from September 2016. Six-hour and eight-hour alerts have since been handled by Host Responsibility Coordinators, whilst 4-hour alerts have remained under the initial purview of gaming machine staff. Whilst these changes were primarily introduced to increase efficiency in handling risk and 'hot player' alerts[6], the modification has also meant that access to player records (e.g. as part of desktop reviews) remains tightly controlled and restricted to host responsibility staff, which should assist in the management of data security risks (as required by Clause 6(3)(a) in Appendix B).

[6] Six-hour alerts were introduced to free HRC staff from attending to an increasing number of 4-hour alerts not considered to be problematic. These now remain the responsibility of GMA/GMS staff. HRC staff explained that the 6-hour introduction had allowed them to focus on cases more likely to include problematic gambling instances.

Gaming machine staff may escalate 4-hour alerts to host responsibility staff, where they deem this necessary (see Figure 2.2). When a 4-hour alert is escalated, it is treated as any other alert with a Host Responsibility Coordinator attending the device area to observe and make contact with the player. A desktop review to learn more about the player and his or her recent gaming history may also be undertaken. The Coordinator may then sign off the case or, if concern about gaming behaviour is confirmed, determine that the player is a "Person of Interest" and initiate a case management process.

Whilst the Skycity application stipulated Table Games Supervisors may be involved in responding to ARM system alerts (Appendix B, p.10), their involvement is currently only indirect, in part because table games are typically not linked to the ARM system. The only exception are automated and semi-automated table games; alerts triggered in relation to their use are emailed to the on-duty Gaming Machine Supervisor, who then informs the Table Games Supervisor. This effective exclusion of non-automated and non-electronic table games from the reach of the ARM system is noted in Skycity's definition of the "devices" to which its application pertains (Appendix B, p.2).

The staff attendance at the device and observation of the player are logged by the staff inserting an Alert Card into the device or a device in the vicinity. The supervisor or host responsibility staff records the incident in a Shift Alert Log, an MS Word document, including the name of the person who attended the device. The attending gaming machine staff also reports back to the gaming machine supervisor any other behavioural or contextual observations that may indicate player risk.

The Risk Alert event monitors and subsequently alerts on the *length of a player session* based on the amount of time a player card is inserted at the device. The ARM system threshold for this time period can be – and is - configured in live floor view as a specified number of seconds. Where a Player session at a single device exceeds the configured number of seconds, an alert will be generated. This type of alerting is generated based on a period of time between the card-in and card-out messages so is only able to be applied to identifiable play.

At the time of approval the Adelaide Casino operated the length of player session at 4 hours or 14,400 seconds. It has subsequently added alerts based on the length of a player session to 6 hours or 21,600 seconds and 8 hours or 28,800 seconds.

'Hot player' alerts are triggered by ARM system threshold values that define a device as being heavily played. The premise of these alerts is to show turnover of *bet volume in a specified time*. This can be extrapolated to indicate player loss if the bet volume is multiplied by a theoretical or standard hold percentage. For example, $1000 bet at a theoretical 10 per cent casino hold indicates a $100 Player loss. The generation of a 'hot player' alert for bet volume is contingent on the associated configured time period. This time period is specified in minutes for each 'hot player' alert type configured and is calculated by the casino separately to the Risk Alert time.

A Player will only generate an alert where they have turnover above the configured ARM threshold during a continuous period of less than the associated configured time for example:

- a 'hot player' spend alert for identifiable play - $42,000 turnover over 200 minutes (i.e. $4,200 loss at 10 per cent theoretical casino hold);
- a 'hot player' spend alert for non-identifiable play - $21,000 turnover over 200 minutes (i.e. $2,100 loss at 10 per cent theoretical casino hold).

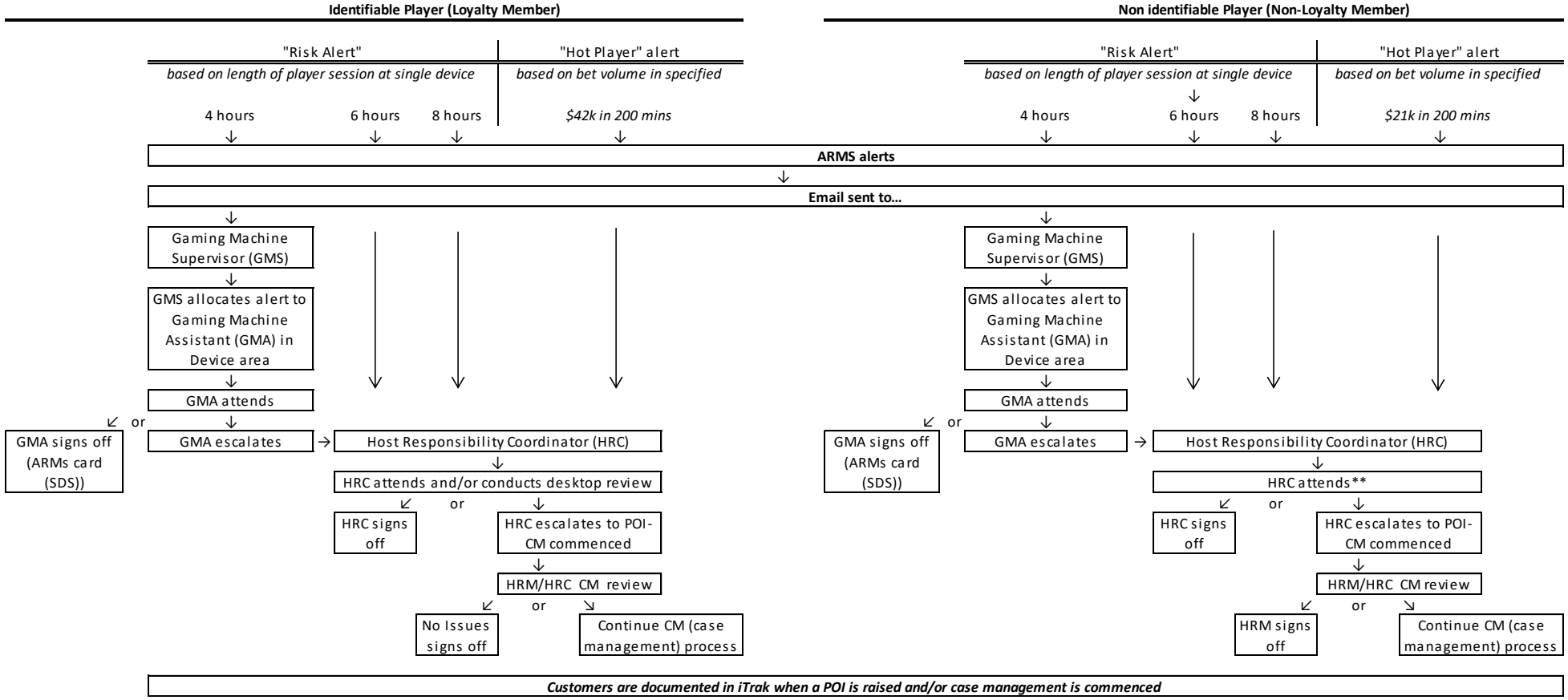
The Adelaide Casino is currently using the 'multiple sessions' 'hot player' tracking option for identifiable players, which allows concluded playing sessions at single devices to be combined and measured against the bet volume threshold (cp. Appendix B, p.11). This option is not available for non-identifiable players.

Custom messages

All ARM system alerts generated are emailed to a centralised internal email address and are received by the Gaming Machine Supervisor on their Desktop PC and by HRM/HRC on their smart phone. Since late 2016, GMS have also been equipped with smart phone, allowing them to receive alerts even when they are away from the desks. While the generation of email alerts is near instant, there have been some reports of problems with receiving alert through the smart phone application, which the Casino has sought to address.

The response time from the generation of an alert to the attendance of a staff member at a device is managed by the Alerts Officer on duty (the Gaming Machines Supervisor or the Host Responsibility Coordinator), and was estimated to be between 5 and 15 minutes (Appendix B, p.10). Actual response times are reviewed in Chapter 5.

Figure 2.2 Overview of 4-hour, 6-hour, 8-hour and 'hot player' alerts handling process



Glossary

HRC	Host Responsibility Coordinator
HRM	Host Responsibility Manager
GMS	Gaming Machine Supervisor
GMA	Gaming Machine Attendant
CM	Case Management
POI	Person of Interest
SDS	Slot Data System

Legend

* New session deemed to start if current play interrupted by 10 or more minutes of inactivity
** Attend and observe/Desktop Review by HRC on EzyPlay card number
*** Except for Hot Player Alerts whose actions are not logged.

Non-identifiable play ARM threshold

The non-identifiable configuration options are the same as those described above for the identifiable 'hot player' set-up, with two exceptions. Firstly, there is no option to link "multiple" sessions of non-identifiable play. This is because the system does not have a way of holding or parking a specific player's data when that player is not playing, or of identifying that player when they subsequently start playing a new device. Therefore, for non-identifiable players the system is unable to re-allocate previous play in addition to a current session of play.

Secondly, because there is no Card-in event to initiate a session of play, an alternative parameter must apply. The calculation of a non-identifiable device session is reliant on a configurable default period of inactivity at the game, based on bets not being placed. The default period is set by the Casino based on the intended use of alerts and on the number of patrons in the casino at the time. The period of time (too short or too long) may lead to a non-identifiable player being in fact another patron (i.e. period was too long) or if too short, it may simply register as a normal break or pause in play.

Currently, a new gaming session is assumed to have commenced after 10 minutes of inactivity. The same threshold is applied to all alert systems. Skycity explained its approach under Clause 6(2)(a) of its application (Appendix B) without specifying the inactivity period it eventually chose. Anecdotal evidence from conversation with host responsibility staff highlighted the difficulty in determining a reliable and widely applicable inactivity period, which tend to vary with context, such as whether a person is playing alone or in a group, or the time of the day (e.g. whether meals are consumed between play).

In short, for a non-identifiable player the system can track gaming participation while on a single device, but because there is no Card-in or no Card-out it is not technically possible to track participation or length of play where a player moves to another device. In these cases, the identification of 'hot players' relies on Casino staff observing the gaming areas and recognising patrons who appear to be spending unusually long periods of time in the Casino and/or betting large sums of money.

Information contained in an alert and response

The details in the alert text box provide information including the name of the patron (where identifiable), Card Number, Device Asset Number, device location and the date and time the alert was generated. Where an alert pertains to an identifiable player, the alert record can be cross-referenced with data on the player's previous gaming at the Adelaide Casino (including alerts, awards, customer service approach/case management or barring data). In desktop reviews that typically follow 6-hour or 8-hour alerts, this information informs decisions on any additional actions that host responsibility staff may take following an alert.

As explained under Clause 6(1)(b)(i) (Appendix B), the ARM system does not convey alerting regarding barring directly although staff have the ability to check player details manually if a person is using a player card and is a member of a loyalty program. A system alert (TAG) can be set to a player account, which then enables notification and detection.

When an alert is received in the relevant department (it is sent to Host Responsibility Coordinators and gaming machine supervisors) it is copied into a worksheet with the type of risk alert, the name of the player and account number, the location of the device they are playing, the date and time and include the player status by tier rank (e.g. a platinum member, diamond member).

Staff who attend the player have participated in basic and advanced training course which include subjects dealing with automatic risk monitoring procedures.

Medium-term monitoring

Adelaide Casino is operating a 'traffic light' alert system that records the number of times a player triggered an ARM alert in the course of one calendar week. Seven or more alerts are marked 'red' and considered to indicate higher risk; 4 to 6 are 'amber' threshold values. Both 'red' and 'amber' alerts trigger a desktop review of player behaviour and track record, which may then be followed up with a player observation or approach for a general conversation. Case management may be suggested where observation or conversation raise concerns about gambling behaviour.

Pre-commitment

Pre-commitment play is monitored in parallel with the ARM system. Both systems operate independently from another; alerts, where they occur, are cumulative and do not override another. However, the systems are not directly connected; this link is formed by host responsibility staff monitoring both. Skycity explained this under Clause 6(1)(b)(ii) of its application (Appendix B).

2.2 Summary of key features

Skycity's application for the approval of the ARM system at the Adelaide Casino described the scope and extent to the monitoring systems, but also some limitations to its functionality, which are not expected to be fully addressed until the end of 2018. SACES's examination of the current functionality of the ARM system as operated at the Adelaide Casino confirms its use as an additional monitoring system that is running in parallel to its host responsibility program. Its key features are:

- 4-hour and additional 6-hour and 8-hour ARM system alerts for identifiable and non-identifiable players;
- 'Hot player' ARM alerts that apply different bet volume thresholds for identifiable and non-identifiable players as per the original application;
- A 10-minute inactivity threshold for defining new gaming sessions for non-identifiable players;
- Capability to aggregate manually and compare playing session times and bet volumes for identifiable players as a tool for assessing gambling risk in wider temporal context, but lack of matching capability for non-identifiable players using cash or *Ezycard* (unless card's account number can reliably be linked to the same person);
- An alert log containing relevant incident and, where available, player information that can be cross-referenced with customer service approach data for identifiable players, containing, amongst others, barring information;
- A medium-term monitoring system that is used to observe identifiable player's gaming behaviour over the course of a calendar week; and
- Concurrent pre-commitment and host responsibility programs designed to assist with managing and reducing the risk of problem gambling, and encouraging responsible gaming and also the responsible use of alcohol at the Adelaide Casino.

3. Relationship Between ARM and Individual Players

TOR 2 Loyalty card, cashless gaming, pre-commitment, and "hot players"

- describe the relationship between the pre-commitment, cashless gaming and ARM systems;
- what role does pre-commitment have in relation to ARM (e.g. pre-commitment involves customers setting their own limits on their play, and so, do breaches of pre-commitment limits inform ARM alerts).

3.1 Loyalty cards, cashless gaming and pre-commitment

The Adelaide Casino facilitates both cashless and cash-based gaming at all its electronic gaming machines and automated and semi-automated table games. Non-automated table games, in contrast, require the patron to buy chips for play, which means they can play as non-identifiable players. However, we are advised that most players use their loyalty card for table play, so that they are able to be identified.

Loyalty card holders playing non-automated table games may swipe their card in order to qualify for and collect loyalty points, and whilst there are a proportion of uncarded and carded players, most table game players use their loyalty card to gain benefit. The average play period has been determined at about 20 minutes per session meaning players do swipe in and out. Behavioural indicators are more obvious due to staff being in such close proximity and indicators are easily identified including length of play. The proportion of table staff compared to customers is high; this with training and experience makes for a reliable system for monitoring play, betting patterns, barred customers and those displaying problem gambling indicators.

Loyalty cards

The premier rewards systems at the Adelaide Casino offers a range of loyalty card types with increasing range of benefits:

- Sapphire (Gaming Machines only);
- Diamond (Gaming Machines only);
- Pearl (Table Games only);
- Platinum (Premium Membership - Gaming Machines only);
- Grange (Premium Membership - Table Games only); and
- Black (Premium Membership - Gaming Machines and Table Games).

Recent commercial innovation at the Casino introduced 'interstate' and 'international' tiers for Grange and Platinum cards. Sapphire and Diamond cards are available to any interested player without restriction provided the player is not barred or has a history of problem gambling. Loyalty cards reward players with points, which convert into a range of benefits, including free parking, complimentary food and drinks (not available to lower tier loyalty card holders), and Casino merchandise. Benefits for Premium Gaming (VIP) may include higher maximum bet limits but for lower tier card holders bet maxima are $5 on the main floor (table games also have bet limits).

The cards are inserted into the gaming machine or passed to dealers at table games, and thus reward players with points based on turnover. The cards also support the ARM system.

In November 2016, Adelaide Casino had 112,719 registered loyalty card holding players. In addition, the Casino had issued 89,705 *Ezycards*, the anonymous gaming cards available at the Casino (Table 3.1). A number of loyalty card holders (387) were logged as "HRC" card, indicating that their gaming behaviour was monitored by HRC who would respond to any ARM alert caused by these players. "HRC" status is at the discretion of the host responsibility department, but can also be requested by players. A further 3,052 loyalty card accounts had been closed, or their holders barred from the Casino by HRC or security staff. The majority of Loyalty Cards are of the entry level 'Sapphire" type (47 percent), which is open to every customer.

Table 3.1 Anonymous and Loyalty card holders[1]

Card type	Number	% active
Anonymous (*EzyCard*)	89,705	44.3
Diamond	7,832	3.9
Grange	569	0.3
Grange International	1,637	0.8
Grange Interstate	3,383	1.7
Pearl	1,369	0.7
Platinum	1,069	0.5
Platinum Interstate	1,521	0.8
Sapphire	94,952	46.9
HRC	387	0.2
Staff	4	-/-
Closed	1,483	-/-
HRC barred	816	-/-
Security barred	753	-/-
Total	205,209	202,424

Note: [1] as at 24 November 2016.

Loyalty card accounts remain on the record indefinitely, which means that there is no correspondence between card accounts and card holders actually gaming at any particular period of time. *EzyCards* are cleared and re-issued about three months after last use if customers choose to return them at one of the card recycling boxes in the Casino. The number of *EzyCard*s in Table 3.1 equates to the total of cards issued since their introduction in 2014. Loyalty cards have been counted and recorded since the Casino's opening in December 1985, although not all cards were available throughout this time.

Pre-commitment

The number of players who have agreed pre-commitment limits with the Casino has risen from 75 in the first week of implementation (February 2014) to 691 in March 2017 (the end of the observation period). The statistics are again cumulative, that is, all pre-commitment players remain logged indefinitely, even when they opt out of pre-commitment as some stage.

Pre-commitment limits can be logged onto any player card (i.e. any loyalty card and the anonymous *EzyCard*) at the player's request, and these limits remain in place until the players choose to change or remove them. The Casino only retains information about *current* pre-commitments; historical data, i.e. of players who have subsequently unenrolled from the pre-commitment scheme are not kept.

Pre-commitment data are held and monitored separately from any loyalty or *EzyCard* card player information. As a result, it is not possible to explore the relationship between pre-commitment and cashless gaming directly or over time.

3.2 Relationship between pre-commitment and ARM risk and 'hot player' alerts

Pre-commitment monitoring is also separate from the ARM system, and the two technologies cannot currently be linked. Both send their own types of alerts, which may concern the same player in the same playing session if a pre-commitment settings and ARM system thresholds are met simultaneously or in succession.

Pre-commitment breaches are attended by Host Responsibility Coordinators who would initially observe the player in order to assess the need to approach. Not all pre-commitment breaches lead to further action. Anecdotal evidence suggests that players breaching low value pre-commitments may be observed ('attended'), but not necessarily approached when they are known to the Coordinator or judged to be using the limit to manage their play and to do so effectively. Host responsibility staff have also encountered players not aware of having set a pre-commitment limit at the time they uploaded money onto their player card.

Data provided by the Casino to the IGA show that a total of 494 pre-commitment limits were set by customers playing at the Casino between January 2016 and March 2017, including 393 with expenditure limits and 101 with time limits (Table 3.2). At least four in ten (40.7 percent) pre-commitment limits had been set at limits at or below the levels typically associated with risk or 'hot player' alerts[7].

Table 3.2 Pre-Commitment limits, 2016

	Expenditure limit (all)	Expenditure limit ($0-$100)	Time limit (all)	Time limit (0-4 hours)	% Expenditure limit $0-$100 or time limit 0-4hrs
Jan – Mar 2016	100	50	22	6	45.9
Apr – July 2016	65	28	11	3	40.8
July – Sep 2016	73	26	27	12	38.0
Oct – Dec 2016	63	23	15	4	34.6
Jan – Mar 2017	92	37	26	12	41.5
Total	393	164	101	37	40.7

Pre-commitment breaches are small in numbers, reflecting the comparatively few instances of pre-commitment registrations, whose cumulative total currently stand at just under 500. The number of players who had exceeded their pre-commitment limits has varied from a low of 4 per month in May and June 2016, to a high of 25 in August 2016. HRC interactions with players exceeding their pre-commitment levels in 2016 ranged from 5 (in both July and August) to 12 (in January, April and June). Over the longer period from July 2015, for which the relevant data are available, HRC interactions ranged from a low of one (1) recorded in December 2015 to a high of 24 recorded in August 2015. Although we cannot tell from the available data the type or level of the limits breached, it would appear reasonable to conclude that pre-commitment is currently more typically used by players spending or intending to spend less time or money gaming than would trigger an ARM system alert. Pre-commitment could thus be seen as complementary to the risk and 'hot player' alerts. The small number of registered active pre-commitments suggests, it is not a widely used instrument to self-manage low-level gaming activity.

3.2.1 Additional note on 'hot player' alerts

As will be seen in the following chapters, 'hot player' alerts account for only a small fraction of all alerts (Figure 5.2) and are primarily and, in comparison to other alerts types, disproportionately triggered by anonymous card holders (Figure 4.2). The ARM system is effective in detecting 'hot players'. However, it does not currently record the actions that the host responsibility team may take in response to 'hot player' alerts. In the light of this, it is not possible to make a firm assessment of the effectiveness of the ARM system with respect to 'hot players' in reducing problematic gambling risks.

Anecdotally, we are informed that carded 'hot players' are frequently playing in premium areas and often have a history of high stakes play, implying that it is within their means to be a 'hot player'. SACES notes that this information may not explain that about one third of 'hot player' alerts in 2015 and about half in 2016 were caused by "anonymous" players, that is, *EzyCard users* or players using cash, if it was correct to assume that premium players would use their loyalty cards rather than cash or the *EzyCard*. Host responsibility staff at the Adelaide Casino acknowledge that current alert and record systems do not provide any more information about non-identifiable 'hot players'.

Anonymous 'hot player' alerts accounted for 74 of 322 'hot player' alerts in 2015, 265 of 548 alerts in 2016, and 128 of 1093 in the first quarter of 2017.

[7] 'Hot player' alerts for non-identifiable players are triggered when turnover reaches $21,000, assuming a Casino take of $2,100, if within 200 minutes of play. Visual inspection of risk and 'hot player' alert records relating to losses at that level suggests expenditure (buy-in/drop) is typically in excess of $100, which, in Table 3.2, is used as a notional threshold below which an alert would not be expected. This is the closest approximation to a 'hot player' threshold that the currently provided breakdown of pre-commitment levels allows.

4. Casino Staff, Customers and the ARM System

TOR 3 Staff

- to what extent is the ARM system clearly understood by relevant staff with regard to: the intention of automated risk monitoring, its role in staff's everyday duties, and who has responsibilities in relation to the various stages of the alert and response process; and
- what is the value of ARM to casino staff in identifying at-risk and potential problem gamblers.

TOR 4 Customers

- are any customers being identified by casino staff as demonstrating potential problem gambling behaviour who have not had an alert generated by the ARM system—if so, why (e.g. ARM thresholds too high; identification is not based on the parameters used for an ARM alert);
- have any customers for which an ARM alert has been generated, become a premium gaming customer since the alert was generated;
- are there any common characteristics of the customers being identified (e.g. demographically, casino membership status, type of gambling); and
- has ARM led to an increase in identification of at-risk and potential problem gamblers.

4.1 Casino staff understanding and valuing of ARM (TOR 3)

At the time of this study, Adelaide Casino employed one Host Responsibility Manager (HRM), six Host Responsibility Co-ordinators (HRC), four Gaming Machine Supervisors (GMS: also acting as Alert Officers, attending 4-hour alerts) and 47 Gaming Machine Attendants (GMA). To be able to assess Adelaide Casino's staff understanding of ARM system, SACES had a number meetings, including one instance of a SACES researcher 'shadowing' an HRC during part of any evening shift (from 5pm to 9pm). Meetings served to:

- Introduce the researchers to the host responsibility team and gather some initial information (15 December 2016);
- Explore and discuss the working of the ARM system as implemented at the Casino (with the Host Responsibility Manager);
- Gather and examine ARM system alert and action data, including response times, and the practice of desktop reviews (11 January 2017, 9 February 2017, 27 March 2017; with the Host Responsibility Manager and one of the Host Responsibility Coordinators); and
- Discuss how, if at all, the ARM system affects or has changed the work of the HRCs (with three additional Host Responsibility Coordinators on 16 February, 24 February and 24 March 2017 respectively).

The meetings also confirmed that host responsibility staff receive specialist training to assist with the development and sustaining of skills critical for identifying and responding to problem gambling risks. GMS and GMA also benefit from this training, if less regularly and intensively, reflecting the different levels of responsibilities with respect to implementing the ARM system.

Host Responsibility Coordinators see the main benefit of ARM in helping them to recognise (more) players of whom they may not have been aware in the past. This said, most host responsibility staff stress the continued importance to their own recollection and recognition of recent and past players, in addition to the additional assistance provided by the ARM system. The system is seen as a helping "tool" (HRC staff), but not a substitute for general host responsibility 'vigilance'.

Staff are aware that the ARM system only works with EGMs and fully automated table games as required, but that it does not work well with regard to regular table games, where players may use cash or chips. In these areas, the onus is on the HRC, dealers and 'pit bosses' to identify risks of problem gambling using visual indicators. It is important to acknowledge that the staff to customer ratio is much higher in the table game area.

Although player card holders at regular table games swipe their card in, there is a possibility that they do not swipe out, which can lead to false risk alerts. Host Responsibility Coordinators noted that, while these players may have left a table, they could still be playing, be it at another table or at an EGM, and this additional play may not be picked up by the ARM system. The Coordinators emphasised the importance of face to face

communication between gaming area supervisors if they wish to 'track' a player about whom they may have concerns. SACES notes that the ARM system is not required on table games under the approved application.

Besides recollection and recognition of players, desktop reviews, which involve examining past gaming records of players who trigger an alert, are a central tool that Host Responsibility Coordinators use to determine the need to approach a player as part of an escalating response. Desktop reviews generate information about a player's buy in, average bet, theoretical and Casino wins, and the time spent playing during recent visits over a time period that can be specified by the investigating host responsibility staff. When inspecting the spreadsheet, HRC staff look for patterns, notably with respect to time and money spent gaming at the Casino. Further action may typically be taken if a current alert suggests a marked deviation from previous gaming behaviour, be it in time spent playing, buy-in or Casino win.

Overall, host responsibility staff are very well versed and familiar with the ARM system, and utilise it as originally intended as a supporting tool when implementing the Adelaide Casino's customer service approach.

Since the introduction of the ARM system, the Casino has worked to enhance the system by adding alerts, analysing alerts and refining referral and follow up responses. In essence, the operation of the system is providing information that can aid and strengthen efforts to reduce or minimise problem gambling.

4.2 Customer relationships (TOR 4)

Customer Service Approach – an overview

Since about 2007, Adelaide Casino has had the following Customer Service Approach and response process in place:

- As noted above, the target is to directly engage with 1000 gambling customers and 500 bar customers each month;
- In case of concern (typically, but not exclusively) following an ARM alert: "1st contact" is made, i.e. HRC approach and talk with the customer in a nonthreatening, noncompromising manner;
- If needed, Case Management is applied, in which a player is monitored for at least 3 months (with monthly review); and
- This is followed by a Maintenance Program.

Data obtained from the Casino's quarterly reports to the IGA suggest that, between January 2014 and December 2016, the Casino met its Responsible Gambling Approaches (RGA) target in nine of the 36 months, and its Responsible Serving of Alcohol (RSA) targets in 11 of the 36 months. Six of the occasions when RGA targets were met and eight of those when the RSA target were met, occurred in 2014. Overall, the trend has been for a gradual reduction in RGA and RSA approaches when customer visitation numbers had remained comparatively steady, starting from around the time of the introduction of the ARM system.

Host responsibility staff have explained the need for continuously learning from the day-to-day operation of the ARM system, especially with respect to managing an increased volume of (then) 4-hour alerts. This learning eventually led to the decision to introduce 6-hour alerts and to reallocate response responsibilities between Gaming Machine Attendants and HRC.

It is conceivable that an increased workload of host responsibility team (as acknowledged by staff) now responsible also for the ARM system contributed to the apparent reduction in RGA and RSA activities. Through its alerts and subsequent actions, the ARM system added to the original RGA and RSA activity volume, and Casino staff were having more conversations with patrons as a result.

Beyond RGA and RSA, the Adelaide Casino dealt with a total of approximately 5,000 alerts in 2015 and again in 2016 (Table 4.1). Most alerts resulted in one or two actions taken. Note, however, that alerts in 2015 did not include 6- or 8-hour alerts, whereas in 2016 they did. In both years, 'hot player' alerts were also included in the counts, but actions in response to 'hot player' alerts were not recorded in either. Alerts data were only recorded from 2015.

Table 4.1 Risk and 'hot player' alerts and actions (2015 and 2016)

	Alerts		Actions				
	All	4-hour only	All	Desktop reviews	GMA attended	HRC attended	HRC approached
2014	3038	2539	n/a	n/a	n/a	n/a	n/a
2015	4926	4616	5395	979	2902	1159	127
2016	4838	3540	7815	3505	3380	708	222
2017 (Q1)	1093	856	1255	223	855	116	61

Note: total alerts for 2015 add to less than 5395 because of 228 cases recorded as both GMA and HRC attending. These are excluded from the table.

Table 4.1 illustrates the increase in activities ('actions') taken on by host responsibility staff, especially with respect to desktop reviews, and the effect of the re-allocation of responsibilities between GMA and HRC from the start of 2016. The latter led to an almost 40 per cent reduction in instances when HRC staff attended alerts, but the use of desktop reviews (an HRC responsibility) more than trebled.

Whether this new pattern of activities has impacted on customer relations in general or the detection of problem gambling is not immediately obvious. A useful indicator could be the number of players actively case managed by Adelaide Casino. However, there numbers are – and have typically been – small. For instance, during April-June 2015, the last quarter for which they were reported, there were 38 players in case management for variable length of time. We have no data on flow into and out of case management during this period. This makes the effect and effectiveness of the chain of customer service activities difficult to assess.

4.2.1 Effectiveness of alert thresholds

HRC staff expressed no firm view on the appropriateness of current thresholds, but generally felt them to be effective. Staff also thought the thresholds were effectively supported by the escalation model that referred alerts from GMA to HRC (in the case of 4-hour alerts) and from HRC approach via intervention to case management (where this action is determined as appropriate).

Without further knowledge of a player's circumstances, the thresholds were felt to be difficult to interpret and to relate to specific alert situations. Additional observation and judgement were hence required to establish the presence or the risk of problem gambling. In making this judgment, HRC are faced with the challenge of striking a balance between responding to an 'objective' signal and assessing the personal circumstances of players who may not respond positively to being approached by a Host Responsibility Coordinator. Hence staff stressed the importance of sensitivity and interpersonal communication skills when dealing with risk or 'hot player' alerts.

To gain a better, if perhaps preliminary understanding of a player's circumstances, desktop reviews are a frequently accessed source of information. As demonstrated below, most risk alerts and especially 6- and 8-hours alerts are triggered by premium players, many of whom also cause multiple alerts. In such instances, Host Responsibility Coordinators may also seek information from premium player hosts (i.e. Casino staff specifically assigned to look after individual premium players) to assist in assessing the need for an intervention.

The inability of the ARM system at the Adelaide Casino to capture multiple sessions of play across the specified time span is not deemed problematic as, in the experience of host responsibility staff, EGM players rarely change machines. These players would be picked up by the 'hot player' alert system. Most 'hot player' alerts are triggered by fast, high-stake play.

4.2.2 Evidence of link between alerts and premium gaming

Alerts are largely and disproportionately triggered by Platinum and Diamond loyalty card holders who, together, accounted for about nine per cent of all loyalty card holders (i.e. excluding *Ezycard*s; 5 per cent including *Ezycards*) in November 2016 (refer Figures 4.1 and 4.2). Throughout 2016, they were responsible for the majority of 4-hour (83 percent), 6-hour (71 percent) and 8-hour (68 percent) alerts. They also accounted for more than one third of 'hot player' alerts (36 percent; Platinum alone: 35 percent), which were dominated by anonymous (cash or *EzyCard*) players (48 percent). In other words, Platinum and Diamond players appear greatly over-represented among those triggering risk or 'hot player' alerts.

Figure 4.1 Four-hour risk and 'hot player' alerts, by player card status (2015)

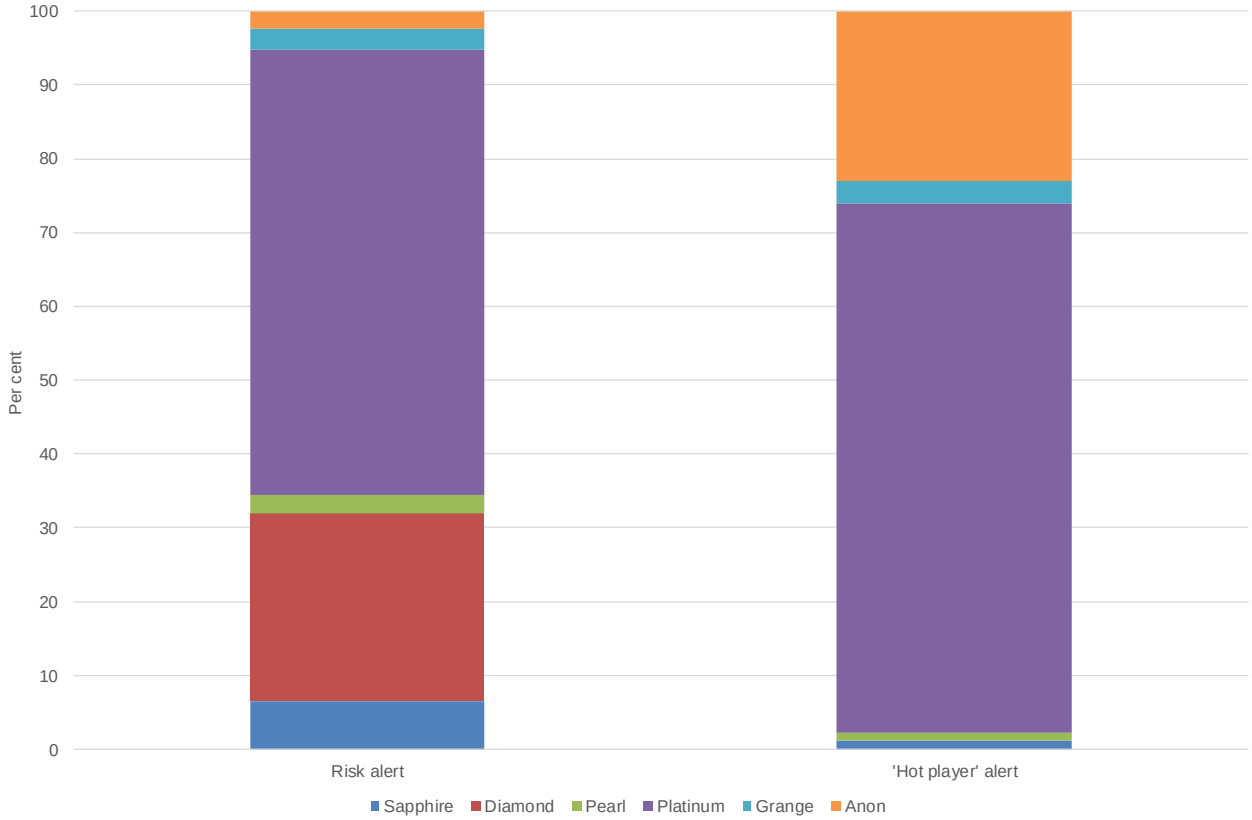
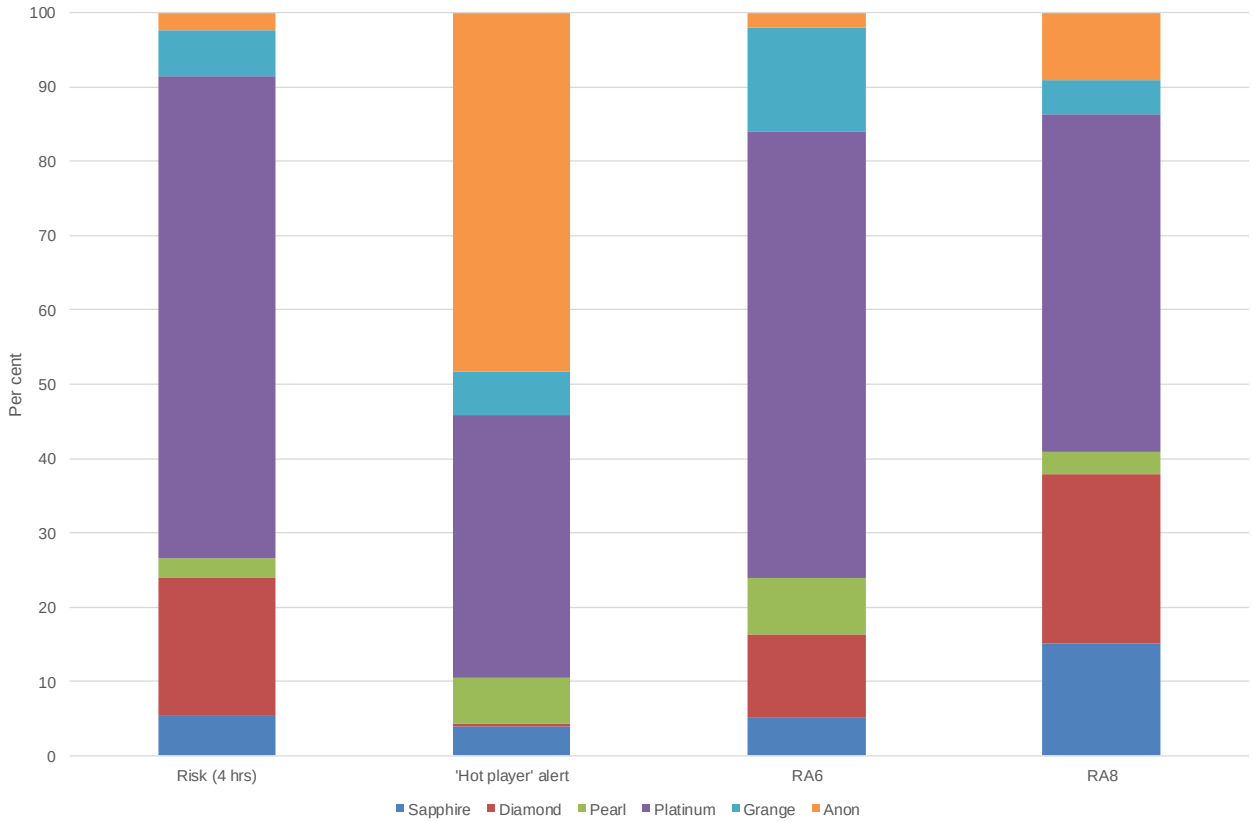


Figure 4.2 Four/Six/Eight-hour risk and Hot Player alerts, by player card status (2016)



We should however qualify this by emphasising that we have no information about the proportion of premium or non-premium players actually visiting and playing at the Adelaide Casino during 2016. This is because, as noted earlier, card statistics are cumulative, counting past patrons who may not have visited the Casino in 2016. It is hence conceivable that premium players made up a larger proportion of all players at the Casino in 2016, such as if significantly fewer of the large pool of *Ezycard* users or Sapphire loyalty card holders had visited the Casino in 2016 than their cumulative totals might imply. However, we do not consider it likely that this scenario would fundamentally change the over-representation of Platinum and Diamond among those triggering alerts, except for reducing its scale.

Whilst the data thus suggest a link between premium player status and risk alerts and, albeit less so, 'hot player' alerts, it is not possible to determine whether there is a sequential link between triggering a risk alert and becoming a premium player. This is because player card data and ARM system data are kept on separate platforms and individual players cannot be tracked over time and across systems.

4.2.3 Characteristics of customers identified with potential problem gambling behaviour

Without access to individual case records, we do not have systematic information about customers identified with potential problem gambling behaviour. Problem gambling has been defined as "characterised by difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others, or for the community"[8].

The ARM system has been set up to monitor money and time spent on gambling, and to issue alerts when players encounter certain bet volume or time thresholds. As such, the ARM system is a helpful tool that addresses the first part of the definition. However, by itself, it cannot provide any insight into the personal circumstances of gamblers, nor anticipate adverse consequences that an observed gaming behaviour may have for the individual or the wider community. Yet this additional information is critical for gambling risk assessments as one cannot assume that someone spending four, eight or more hours playing at the Casino, or recording a high bet volume, is necessarily displaying traits of problem gambling. Obtaining contextualising information to make such a judgement remains the task of the host responsibility team, who endeavour to develop 'profiles' of players at the Casino, gathering information about alerts, general patterns of play, and, insofar as feasible, acquiring some knowledge of personal backgrounds.

Descriptions that host responsibility staff were able to provide to SACES drew on such profiles, some of which supported by logs, others reflecting the team's on the job experience and capacity to recall alerts and players, and to make connections between them. These descriptions are necessarily abstract and somewhat generalised, although a thorough analysis of logs, which was beyond the remit of this study, could well yield richer detail. It must also be pointed out that, whilst we have no reason to believe that they were in any way incorrect, SACES was not able to further validate the Casino staff's accounts of player characteristics.

Our conversations with host responsibility staff suggested a prevalence of younger male players amongst those seeking advice or help with their gambling behaviour, including requesting to be barred. Many are especially active in the table gaming areas. We were told about an apparent shift in the national or ethnic origin of these largely self-identified problem gamblers, who are now more likely to include a larger proportion of individuals of Middle Eastern origin, whereas in the past, many would have been of Asian origin.

Less was known about potential problem gamblers using EGMs. This was explained to us as a reflection of the greater isolation and anonymity enjoyed by gaming machine players, which contrasts with the public and social nature of playing table games. As a result of this isolation and also the greater social stigma attached to EGMs, EGM users appeared less likely to self-identify with problem gambling issues. This reluctance to self-identify added to the importance of the ARM system as a tool for detecting problem gambling in EGM area.

4.2.4 Change in identification of at-risk and potential problem gamblers

Host responsibility staff acknowledged the value of the ARM system as an additional tool for detecting potential problem gamblers and in raising awareness of individual players, in particular those who cause repeated alerts.

We were told that many, if not most, risk and 'hot player' alerts were triggered by players known to the Casino for their high stake gambling. Because these players are also comparatively wealthy, their behaviour was not deemed to indicate problem gambling (and the lack of any other indicators) as per the earlier definition, which emphasises also the social and personal context of gaming behaviours. Insofar as these players were already known to the Adelaide Casino prior to the introduction of the ARM system, a principal benefit of that system is

[8] SACES with the Department of Psychology, University of Adelaide (2005) Problem Gambling and Harm: Towards a National Definition. Published on behalf of Gambling Research Australia by the Office of Gaming and Racing, Victorian Government Department of Justice, Melbourne Victoria Australia, p.3.

its capacity to serve as an 'early warning system' detecting or alerting to new or returning customers who may, now or in the future, show signs of a lack of control over time or money spent gambling.

As yet, however, there was no indication from host responsibility staff of an increased detection of at-risk and potential problem gamblers as a result of the ARM system. While the ARM system was directing more attention to individual players, in the majority of cases, initial observation of, and sometimes interaction with, players concluded that there was no evidence of 'at risk' or indeed problem gambling present. This was most apparent (as will be explained further below) with respect to 4-hour alerts, few of which have to date been escalated from the gaming machine to the host responsibility team (cp. Table 5.1).

Identification of problem gamblers outside the ARM system is largely confined to individuals requesting barring, an individuals' family (e.g. parents or partners) requesting barring, individuals reported as barred by the IGA, or individuals recognised by Casino staff as barred or having displayed problematic (gambling or other) behaviour in the past who are now returning to the Casino. As noted in the Skycity application (Appendix B, p.16), the ARM system is not set for issuing barring alerts.

5. Analysis of Data

TOR 5 Data analysis

- provide data about—
  - number and types of alerts generated;
  - what level have alerts reached in the response process, is there any difference between the alert types in the level reached, and the number of alerts resulting in an engagement with the customer;
  - time lapse between each of the alert response stages (i.e. alert to customer engagement).

The Authority seeks two waves of qualitative and quantitative data collection—

- Wave 1 is for the data period beginning from the date the ARM system became operational until the date of commencement of the project; and
- Wave 2 two is for a period of twelve months, commencing from the conclusion of the wave one data period.

Adelaide Casino has been operating the ARM system since May 2014. This study's original remit was to analyse alert data during two waves: the period from May 2014 to February 2016, and the period from March 2016 to March 2017. Delays to the start of the study and data availability issues required changes to this planned schedule. The delays mean that we are able to include and use all data at once in this report. But there remain some limitations. First, despite being in operation from May 2014, reliable data on ARM system generated risk or 'hot player' alerts are only available from August 2014. Although 4-hour alerts were recorded for July 2014, their numbers were inflated due to technical problems affecting the setting up of the ARM system at the time, rendering the data unreliable.

In addition, ARM actions for 4-hour alerts were only recorded from 2015 because, whilst the procedure for responding to the alerts had been developed in 2014, their mode of recording was not finalised until the following year.

The available ARM system data also do not record 'hot player' actions, although alerts are logged.

Finally, whilst 8-hour alerts have been recorded within the ARM system since September 2016, they had previously been logged and counted amongst 4-hour alerts, and continue to be counted in this way. As further elaborated below, this means that 8-hour alert are, in fact, being counted more than once. But whereas their double-counting can be corrected by deducting 8-hour alerts from the total of 4-hour alerts, this can only be done from the date that their numbers were also separately recorded (i.e. September 2016). Similarly, 6-hour alerts are also recorded first as a 4-hour alert.

These limitations affect and, occasionally, restrict the analyses that can be conducted.

5.1 Frequency, type and emerging patterns of alerts

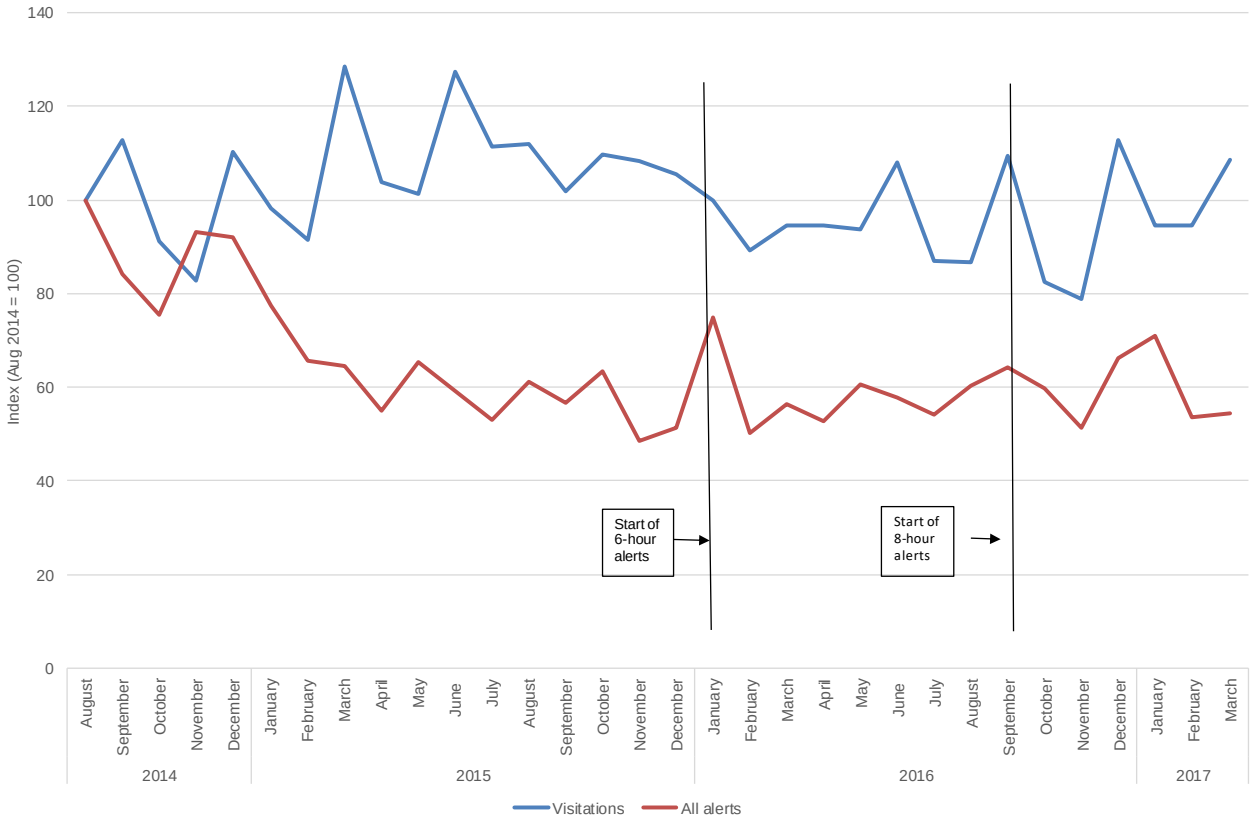
The Casino has good data on player numbers from visitations and active loyalty card holders.

Visitations are recorded by Casino security staff (equipped with manually operated tally counters), counting entries to and exits from the Casino. These numbers hence count actual and potential players, and may count the same person more than once. Between January 2014 (the earliest data for which we have these statistics) and March 2017, monthly visitation numbers have ranged between a low of 121,535 (in December 2014) and a high of 163,582 (in December 2016). Visitation numbers fluctuate during the year, but do not display any clear seasonal pattern.

For the period for which we have both sets of data, both the number of alerts and the number of visitations trended downwards, but, as in the case of RGA and RSA approaches noted in section 4.2 above, the decrease in alerts was steeper than the change in visitation numbers (Figure 5.1). Much of the decrease in alerts, however, occurred in the nine months to April 2015; since then, monthly total alerts have remained relatively stable.

In an effort to streamline responses to player alerts and to enhance capability to distinguish between an initial 4-hour alert and subsequent alerts following continued play, the Casino introduced a system of 6-hour alerts in December 2015 (although not recorded until January 2016) and incorporated 8 hour alerts into the ARM system in September 2016. Unlike 6-hour alerts, 8-hour alerts were not entirely new as they had been operated outside the ARM system since September 2014, but without being logged. Whereas 4-hour alerts were and are continued to be responded to by GMA, 6- and 8-hour alerts are now been attended to solely by HRC staff.

Figure 5.1 Adelaide Casino visitations, risk alerts, and fitted trend lines, indexed (August 2014=100)



The alert frequencies shown here are different from those previously reported by the Adelaide Casino in its Host Responsibility Reports to the IGA because of errors in the original data collection and aggregation, which have now been corrected. The problem had arisen from the ARM system logging multiple alerts for the same case and instance. This has now been addressed and records back dated.

Figure 5.2 provides a more detailed breakdown of alerts by their type. It reveals a decrease in 4-hour and 'hot player' alerts between August 2014 and December 2015, after which they briefly peaked in January 2016, before settling at a slighter lower level for the rest of that year. Four-hour alerts make up the largest share of alert by far, followed by 6-hour alerts (introduced in January 2016) and 'hot player' alerts. Eight-hour alerts, integrated into the ARM system in September 2016) make up a very small fraction of all alerts.

These statistics show the total number of alerts triggered by the ARM system since its installation. They also contain an amount of double-counting, which cannot be easily corrected. Thus, every 8-hour alert would be included twice in the count of 4-hour alerts: once as the initial 4-hour alert and, again, as the second 4-hour alert after a total of eight hours. Likewise, a 6-hour alert would also be recorded as an initial 4-hour alert. Another, albeit infrequent and generally unlikely, source of double-counting are 'hot player' alerts, which may temporally coincide with any one of the three risk alerts.

Figure 5.2 Adelaide Casino ARM system risk and 'hot player' alerts, August 2014-March 2017

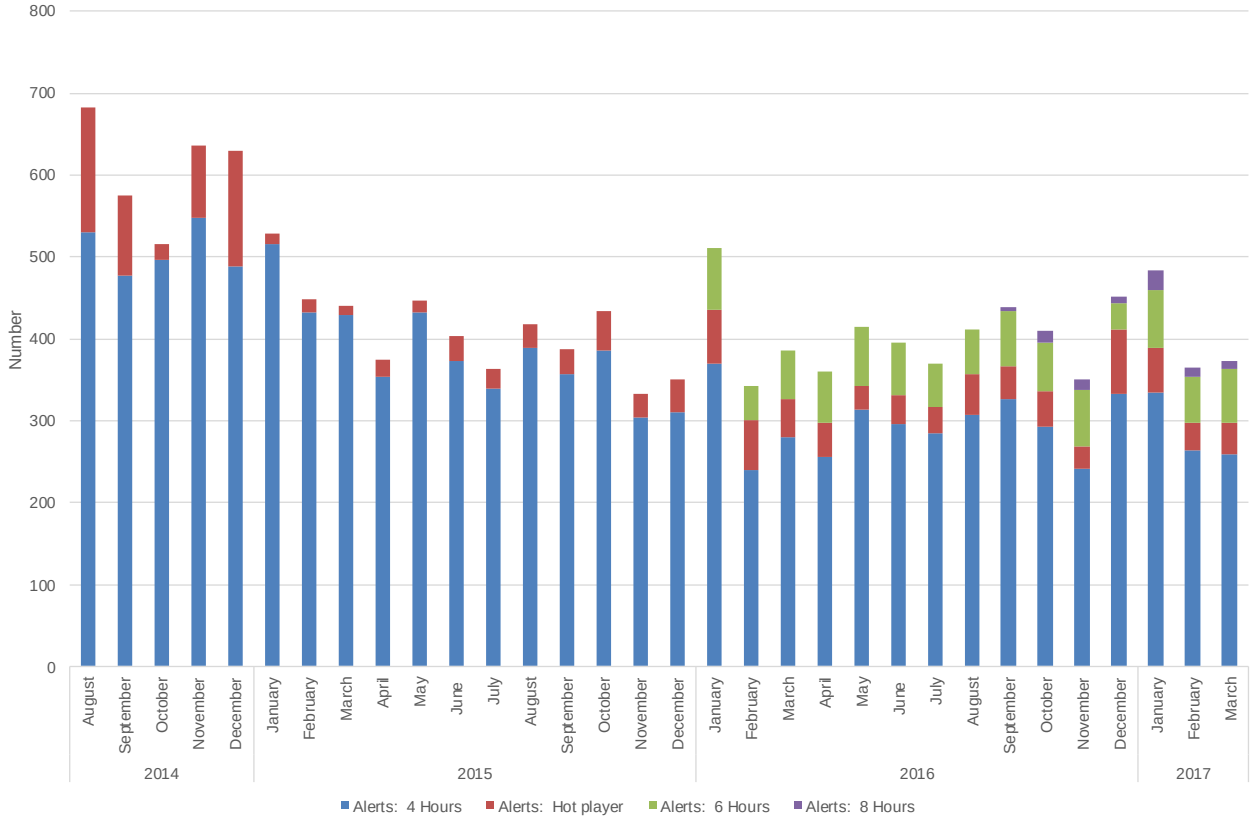


Figure 5.3 seeks to account for some of the double-counting. It shows alert counts indexed at 100 in August 2014. Double-counting is reduced by, first, extracting 'hot player' alert as a separate category; second, by counting different alerts and combinations of alerts, namely:

- 8-hour alerts introduced in September 2016 are no longer mapped as a separate category since they are already counted amongst the 4-hour alerts;
- the '4-hour and 8-hour alerts' category counts single and repeat 4-hour alerts that have always been included in the 4-hour alert statistics; they are consistently available from August 2014, as 8-hour alerts were recorded as additional 4-hour alerts even before their formal integration alerts into the ARM system;
- a combined '4-hour, 8-hour and 6-hour alerts' index adds all 6-hour alerts (introduced from January 2016) to the above '4-hour and 8-hour alerts' count; while
- the combined '4-hour, 8-hour and 6*****-hour alerts' line only includes those 6-hour alerts that did **not** subsequently result in an 8-hour alerts (which would have been counted already).

A second or fourth ('hot player' alerts only) order polynomial trend line is added to illustrate the principal direction of change in the number of these alerts over time. Note that for the period prior to January 2016, the *risk alert* lines are identical and show as only one line in the chart, although trend lines diverge because of the differences in more recent log data.

Several trends stand out:

- a steady decrease in the number of combined 4-hour and 8-hour alerts, levelling off from mid-2016;
- as expected, an increase in alerts as a result of the introduction of 6-hour alerts; and
- a more volatile patterns of 'hot player' alerts, increasing from about January 2016 (or from as early as January 2015, if 2014 data were excluded[9]).

[9] Given the typically small number of 'hot player' alerts, even small variations in these numbers can show up as noticeable trend changes. 'Hot player' statistics for 2014 are nominally much higher than subsequent counts, but, in 2015, were much lower than prior and subsequent counts. Their higher and more variable number in 2014 was due to alerts being counted more than once. This was subsequently changes to a single alert, resulting in lower numbers from 2015.

Figure 5.3 Adelaide Casino risk and 'hot player' alerts, and fitted trend lines, indexed (August 2014=100)

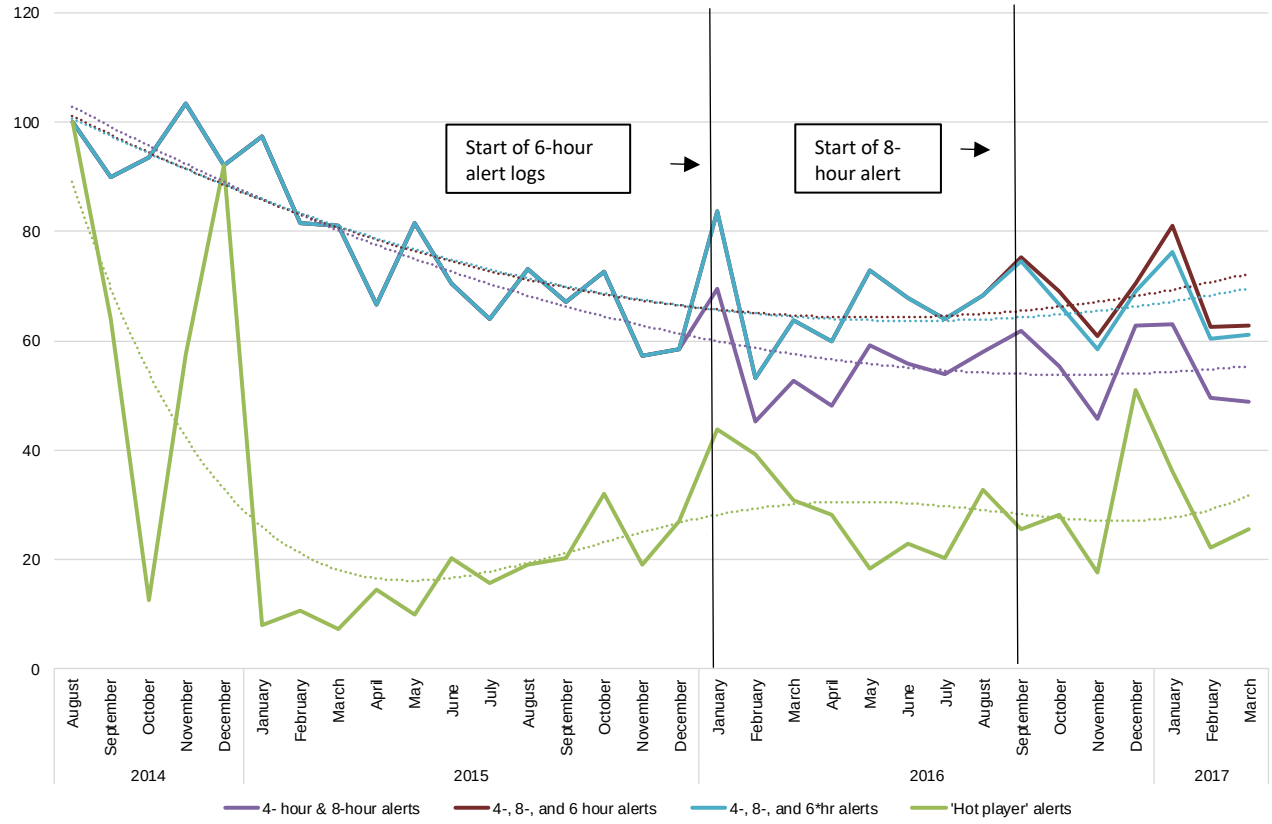


Figure 5.4 Adelaide Casino 6-hour (net of 8-hour alerts) and 8-hour alerts, 2016 - Q1 2017

The two indices that, respectively, include *all* 6-hour alerts or only those 6-hour alerts that did not translate into 8-hour alerts reveal a slightly steeper upward trajectory of the former line that includes *all* 6-hour alerts, i.e. also those that subsequently led to 8-hour alerts. This could suggest that 6-hour alerts have so far had limited impact on the frequency of occurrence of 8-hour alerts. Closer inspection of the data however also shows that this trend was reversing in the first three months of 2017, as the number of 6-hour alerts not resulting in an 8-hour alert increased at the same time as 8-hour alerts decreased (Figure 5.4).

It is too early to say if this trend reversal is indicative of 6-hour alerts beginning to reduce higher level risk alerts or if the divergence has other causes, and if any such trend might be sustained over time. Further monitoring of these developments is therefore recommended.

Summary of key trends:

- the frequency of all ARM system alerts approximately followed the trend line in visitation numbers at the Adelaide Casino and has remained relative stable since about mid-2015;
- alert statistics for 2014 appear out of line, possibly due to continued bedding in challenges in the early phase of the introduction of the ARM system;
- the integration of 8-hour alerts into the ARM system in September 2016 helps to illustrate the relative contribution of these alerts to the already current total, but their inclusion also as repeated 4-hour alerts leads to double-counting;
- the introduction of the 6-hour alerts appears so far to have had limited effect on the subsequent occurrence of 8-hour alerts, but recent trend changes should be monitored.
- 'Hot player' alerts have been highly variable over time; the causes of which would warrant investigating.

5.1.1 Links between alert, customer engagement and other outcomes

For the period since January 2015, we have a complete set of statistics on ARM risk alerts, and on actions taken in response to these alerts. Because actions in response to 'hot player' alerts are not recorded, we exclude 'hot player' alerts from the following reflections. For all other risk alerts, the Casino's ARM system logs the following alert actions:

- Gaming Machine Attendants (GMA) attending;
- Host Responsibility Co-ordinators (HRC) attending;
- Host Responsibility Co-ordinators or Manager (HRC/HRM) approaching;
- Desktop review.

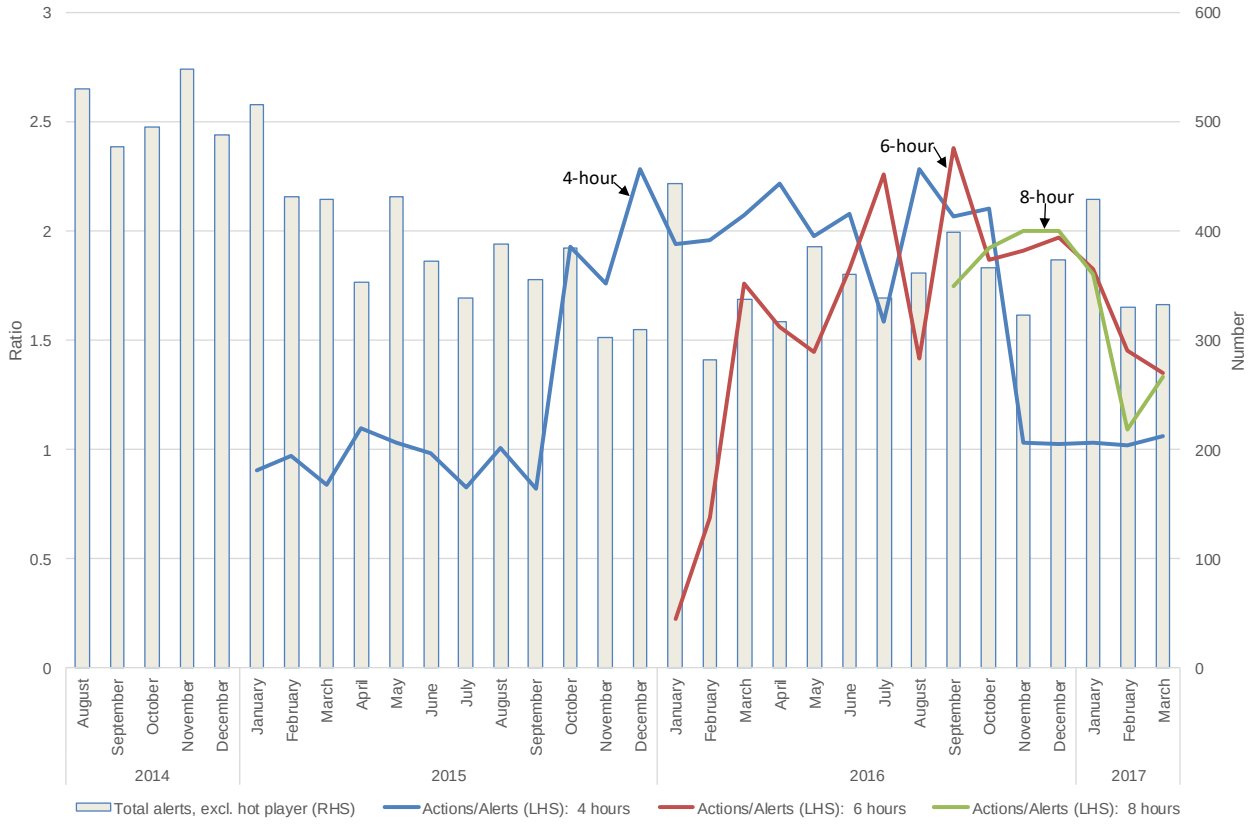
Whereas the first three are sequential, escalating interventions, the fourth, the desktop review, is an intermediate stage, which involves the review of player information (primarily records of recent gaming activities). Such 'player file' review is intended to inform decisions as to the need for further alert escalation, based on the player's recent gaming behaviour. Unlike the first three actions, desktop reviews are always recorded on the ARM system log. In the case of the other three actions, only the final one that is taken is recorded.

For most of 2015, an ARM risk alert, on average, resulted in one action, either led by gaming machine staff or the host responsibility team, and, in the early phase, occasionally undertaken jointly (Figure 5.5). From October 2015, the ratio of actions to alerts approximately doubled; this was solely as a result of the introduction of desktop reviews from that month. The drop in alert actions and the ratio of action to alerts in November and December 2016, in turn, resulted from the Casino ceasing desktop reviews for 4-hour alerts, unless gaming machine or host responsibility staff felt alert circumstances required a desktop review.

As illustrated by Figure 5.6 and 5.7, 4-hour, 6-hour and 8-hour alerts all triggered similar proportions of total actions and desktop reviews, once we allow for time for new action alerts to settle in and some month-to-month variation. Figure 5.7 also shows that a very small proportion of 4-hour alerts resulted in a desktop review even after the formal cessation of desktop reviews for these alerts (from November 2016). We are told that, on those occasions, following escalation from gaming machine staff, the Host Responsibility Coordinator would have used a desktop review to inform his or her decision on whether to declare the player triggering the alert a "Person of Interest".

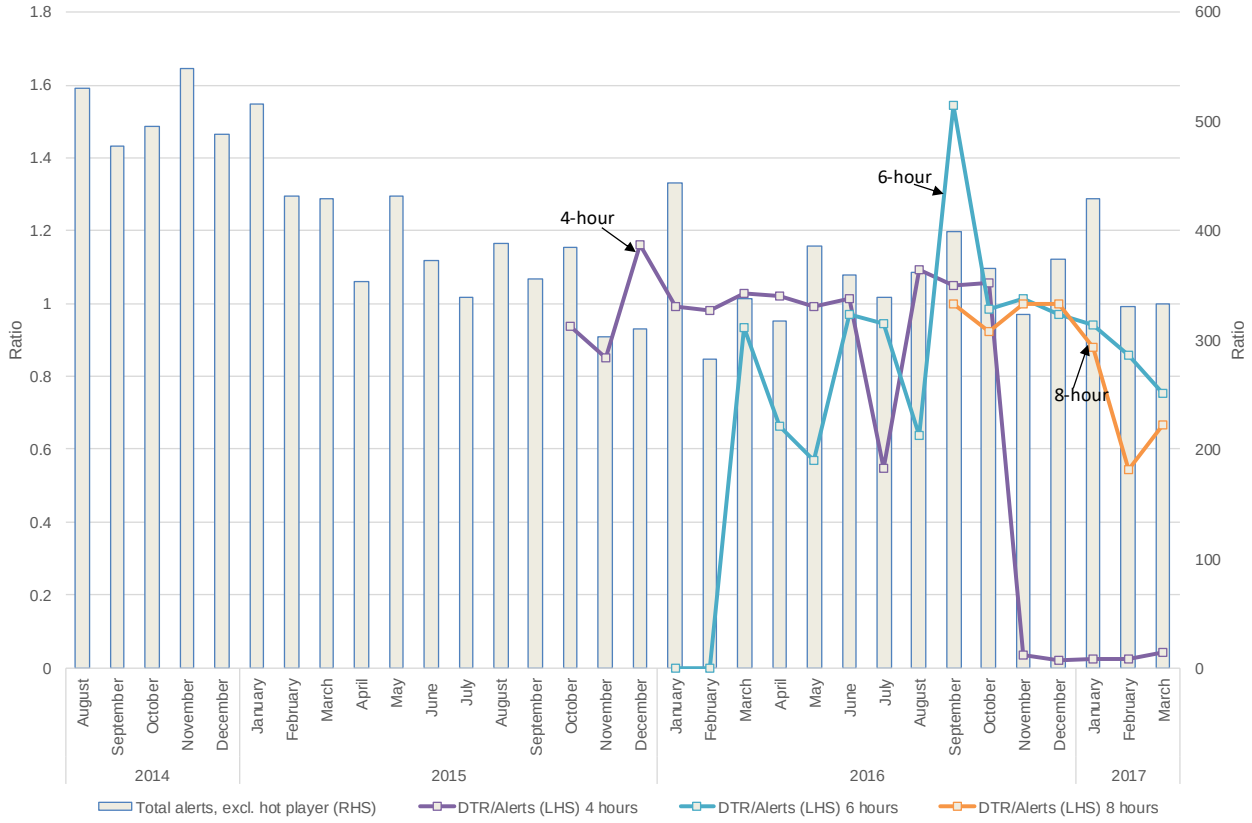
Figure 5.5 Adelaide Casino ARM risk alerts, actions and ratio of actions to alerts, August 2015-December 2016

Figure 5.6 Adelaide Casino ARM risk alerts and action to alert ratios, by alert



Note: LHS = left hand scale; RHD = right hand scale

Figure 5.7 Adelaide Casino ARM risk alerts and desktop reviews to alert ratios, by alert



Note: LHS = left hand scale; RHD = right hand scale; DTR = desktop review.

Overall, we observe a distinct patterns of actions in response to the different alert types with most 4-hour alerts resulting in gaming machine attendants attending, whereas the majority of 6- and 8-hour alerts led to host responsibility staff approaching the player (Table 5.1). Also apparent is the increased use of desktop reviews in 2016 and the first quarter of 2017, including a high level of use in the case of 8-hour alerts.

Table 5.1 Percentage of alerts receiving action, by risk alert, type of action and year (row %)

	Year	GMA attended	HRC attended	HRC approached	Desktop reviews **	Alerts (N)
4-hour alert	2015	62.9	30.0	2.8	21.2	4616
	2016	95.0	8.5	0.6	82.4	3540
	2017 (Q1)	99.9	0.5	0.4	2.9	856
6-hour alert	2016	2.2	54.1	26.1	77.2	712
	2017 (Q1)	0.0	44.8	25.5	85.4	192
8-hour alert*	2016	0.0	55.3	42.1	97.4	38
	2017 (Q1)	0.0	57.8	20.0	75.6	45

Note: * introduced in October 2016; period covered to end of December 2016. ** introduced October 2015; suspended for 4-hour alerts in October 2016,
Base: all alerts recorded in that year/period

In their current format, the data that are available to the researchers do not allow an assessment of how desktop reviews affect, or interact with, other risk alert actions. In particular, we cannot determine when a desktop review was the final action that was taken in response to a risk alert, or when it was followed by some other intervention. As a result, the data contain an unknown number of double-counted actions in response to some risk alerts.

We can however determine the relative frequency of the final actions taken in response to the three alert types after excluding desktop reviews (Table 5.2). This confirms that 4-hour alert were primarily attended by GMA, with additional actions taken in about 10 percent of instances in 2016 and in the first quarter of 2017. Prior to the introduction of 6- and 8-hour alerts and of the new division of responsibilities between gaming machine and host responsibility staff (i.e. in 2015), the latter also attended about one in three 4-hour alerts. Six- and 8-hour alerts are the principal responsibility of host responsibility staff, unless they are not available and gaming machine staff take their place. In both instances, in 2016, alerts were more likely to result in a Host

Responsibility Coordinator engaging in a conversation with the player ("HRC approached") than was typically the case for 4-hour alerts.

Table 5.2 Percentage of final actions taken, excluding desktop reviews, by risk alert and year (row %)

	Year	GMA attended	HRC attended	HRC approached	All actions (N)
4-hour alert	2015	65.7	31.4	2.9	4416
	2016	91.3	8.2	0.5	3686
	2017 (Q1)	99.2	0.5	0.3	862
6-hour alert	2016	2.7	65.6	31.7	587
	2017 (Q1)	0.0	63.7	36.3	135
8-hour alert*	2016	0.0	56.8	43.2	73
	2017 (Q1)	0.0	74.3	25.7	35

Note: * introduced in October 2016; period covered to end of December 2016.
Base: all actions recorded in that year/period, excluding desktop reviews

Summary of key trends:

- alerts typically triggered one (1) action by gaming machine or host responsibility staff; this doubled with the introduction of desktop reviews, which are reported in addition to other actions taken.
- allowing for monthly fluctuations and variations during bedding in periods, 4-hour, 6-hour and 8-hour alerts all triggered, on average, similar numbers of actions.
- The reallocation of responsibilities for alert action from January 2016 led to a notable reduction in 4-hour alerts being acted on by host responsibility staff (especially approaching players) and a concomitant increase in gaming machine staff attending these alerts.
- six-hour and 8-hour alerts are more likely to result in a more 'intensive' action as players are approached rather than merely observed ('attended').

5.1.2 Time lapse between alert response stages

The Casino monitored response times to alerts for SACES on altogether six occasions. Four-hour alerts were monitored between 11th and 17th July 2016, and again between 19th and 25th September 2016. The average time between the generation of a 4-hours alert and Casino staff attending the device or table was 26 minutes during the July week and 13 minutes during the September week (Table 5.3, 3rd row, bold).

To allow for their less frequent occurrence, 6- and 8-hour alerts were monitored over longer periods. Six-hour alerts were first monitored between 10 October and 31 October 2016; and 8-hour alerts between 1 September and 31 October 2016. During these periods, 6-hour alerts took, on average, 8.3 minutes to attend, while 8-hour alerts were attended to within, on average, 11 minutes (Table 5.3).

Table 5.3 Response time statistics, 4-, 6- and 8-hour alerts

	4-hour alert		6-hour alerts		8-hour alerts	
Number of alerts	73	88		27		26
Number of alerts with actions and/or time recorded	35	65		27		18
Mean response time (mins)*	**26**	**13**	**8.3**	**9.11**	**11**	**9.8**
Median response time (mins)*	12	10		8.00		8.5
Min. response time (mins)*	2	2		3		3
Max. response time (mins)*	123	126		19		21
Logging period	11/07-17/07/2016	19/09-25/09/2016	10/10-31/10/2016	27/01-03/02/2017	1/09-31/10/2016	17/01-31/01/2017

Legend: *valid cases with recorded actions and/or times only.

Six-hour alerts were monitored for a second time between 27 January and 3 February 2017, while 8-hour alerts were again monitored between 17 January and 31 January 2017. Response times during this second monitoring period averaged 9 minutes for 6-hour alerts and 7 minutes for 8-hour alerts.

The Casino was able to provide SACES with a detailed, de-identified listing of these alerts and their corresponding response times, which allowed for some more detailed analysis of response times. The data in Table 5.3, thus, show some marked variations in response times, which, in all instances, refer to the final action taken. Moreover, in the case of both measurements of 4-hour alerts and also during the second measurement of response times to 8-hour alerts, the data only included response times (and actions) for some, but not all alerts. All statistics shown in Table 5.3 are estimated using only those cases with recorded response

times. The considerable range in response times, in particular for 4-hour alerts, for which response times in excess of two hours were recorded, makes mean response times less meaningful. In these instances, a better indicator is the median response time, which measure the maximum time taken to respond to half of all valid alerts. Median response times varied from 8 minutes for 8-hour alerts to 12 minutes for 4-hour alerts (both at first instance of measuring).

The Skycity application suggested that "in most cases, the response time from the allocation of the alert to attendance at the machine will be 5-15 minutes" (Appendix B). The data reviewed in Table 5.3 suggests that these response times are being met in at least half of all recorded instances, but in many instances response times proved considerably longer. Response time information is missing for up to half of 4-hour alerts and some 8-hour alerts because no actions were taken or logged. In the case of missing logs for 8-hour alerts, some had been recorded also as 6-hour alerts as a result of recurring technical issues.

Summary of key trends:

- four-hour alerts take, on average, between 13 and 26 minutes to attend, while response times from alert to attendance for 6-hour and 8-hour alerts are typically under 10 minutes, in line with specifications in the Skycity application;
- the wide range of response times recorded, especially for 4-hour alerts, shows that a non-negligible proportion of alerts are not being met within the 5-15 minutes response time frame originally specified by Skycity; and
- a notable number of 4-hour alerts and a fraction of 8-hour alerts appeared not to have been attended to, or had no actions recorded for.

6. Summary and Discussion of Findings

SACES review of the Adelaide Casino current implementation of the ARM system has found that current practice is principally in accordance with the specifications and conditions outlined in the Skycity application for approval dated 29 April 2014. The review also notes additional changes made by the Casino that are showing signs of enhanced efficiency and effectiveness in gambling risk monitoring. These are the introduction of 6-hour alerts from January 2016 and the release of host responsibility staff from their previous responsibility to respond to 4-hour alerts, except where staff availability and risk concerns dictate otherwise.

The Skycity cashless gaming application stipulated further adaptations to the ARM system to be implemented by the end of 2018. These and any progress towards achieving these were not part of this review.

In the following, we summarise our main conclusions from the review.

6.1 Functionality

6.1.1 Alerts

The ARM system operational at the Adelaide Casino since May 2014 initially alerted host responsibility and gaming machine staff to players who had spent four hours betting at EGM or automated table games (4-hour alerts). Concurrently, but outside the ARM system, alerts were also triggered after eight hours of continuous play, whereby 'continuous' is defined as allowing for breaks in the setting of bets lasting no more than 10 minutes.

From September 2016, these 8-hour alerts became integrated into the ARM system, meaning that these alerts were now also being logged, along with actions and response times. In January 2016, 6-hour alerts had already been introduced, after host responsibility staff found that few 4-hour alerts, in fact, identified Casino patrons who were displaying problematic gambling behaviours.

Our review of current operations, which have included the 6-hour and ARM system integrated 8-hour alerts, confirmed that 4-hour alerts remain largely monitored by Gaming Machine Attendants (GMA) and are rarely escalated to host responsibility staff. This would appear to warrant the introduction of 6-hour alerts and the discharge of host responsibility staff from monitoring 4-hour alerts, who may then focus on higher level alerts.

6.1.2 Actions

The SACES review has found that since the launch of the ARM system, most alerts have resulted in one or, since the introduction of desktop reviews in October 2015, two actions taken by gaming machine or host responsibility staff. Actions may have involved staff attending the gaming area for observation, staff approaching a player in conversation or desktop reviews, or a combination of the three.

These actions are appropriate and as intended as responses to alert triggered by the ARM system. However, during response time test (see below), SACES has also found instances of non-response, especially to 4-hour and 8-hour alerts.

Furthermore, SACES notes that actions in response to 'hot player' alerts are currently not being recorded. Unlike ARM system risk alerts, which have primarily and disproportionately been triggered by premium loyalty card holders, 'hot player' alerts have often resulted from anonymous play. Although small in numbers, the prevalence of anonymous and largely non-identifiable players amongst 'hot players' is of some concern.

We **recommend** that steps are taken to ensure that appropriate Casino staff attend *all* alerts, especially 8-hours alerts, and that all actions, including those in response to 'hot player' alerts, are logged.

6.1.3 Response times

SACES notes marked variations in alert response times, in particular for 4-hour alerts. Although response time tests showed that average response times were typically within the 5-15 minute range specified in the Skycity cashless gaming application, several alerts took considerably longer to respond to. Others had no actions and, hence no response times, logged against them at all.

We **recommend** that the reason for recording gaps and for log response times are investigated further and appropriate steps are taken to rectify both.

6.2 Effectiveness

6.2.1 Generic benefits of the ARM system

The ARM system has a complex alerts structure, backed by a well-defined division of alert action responsibilities. Host responsibility and gaming machine staff received training in understanding and operating the ARM system, and in detecting and responding to problem gambling. SACES found that host responsibility staff have a good understanding of the system's functionality, role and potential, but also its limitations.

Adelaide Casino staff appreciate the ARM system as an *additional* tool for detecting and monitoring 'at risk' or problematic gambling *in support of* their routinely 'walking the floor'. The ARM system is described as helping staff to identify players and their gaming behaviours that may otherwise go unnoticed. Importantly, the system reduces the need for host responsibility staff to be physically present in order to be able to detect and monitor customers engaging in long playing sessions.

Although the ARM system does not extend to non-automated table games, SACES encountered few concerns that this could risk a failure to detect instances of problem gambling since additional floor staff had been allocated to these areas to ensure adequate monitoring.

6.2.2 Capacity to detect problem gambling

Conversation with host responsibility staff suggest that the ARM system may not have increased the identification of at-risk and potential problem gamblers, but it has alerted staff to players whom staff may otherwise have not noticed. The ARM system may thus, as intended, serve as an 'early intervention' tool. The extent to which this has been the case, however, cannot be determined reliably given the ARM system's only partial ability to consistently track gaming behaviour. Moreover, it cannot be concluded a priori that spending the indicated time gambling also indicates problem gambling or is indicative of that risk.

In this context, we note that recent 6-hour and 8-hour alert statistics show the former increases as the latter decreases. It is too early to say whether these two divergent movements are related insofar as the actions following 6-hour alerts may reduce the number of players going on to play until the 8-hour alert is triggered. A thorough assessment of the ARM system's capacity to detect problem gambling requires more data than are currently available. Although the ARM system measures indicators of problem gambling, namely time and money spent wagering bets, an impact assessment would also need to examine information about the content and consequences of interventions (especially approaches of players) that follow an alert, some of which is already recorded, if in shorthand, on the electronic record of alert response actions. Ideally, some type of comparative data not based on ARM system would also be needed.

SACES **recommends** that the scope for using and/or enhancing the existing ARM system data with a view to improving the early detection of problem gambling be examined.

6.3 Interaction with other practices and systems

6.3.1 ARM system and Customer Service Approach

The ARM system supports Casino staff in their customer support activities and is valued as such by staff. SACES found no evidence of the ARM system leading to an *intended* displacement of other elements of the Casino's customer service approaches. While the Casino has not met its self-imposed customer contact targets for Responsible Gambling Approach (RGA) and Responsible Serving of Alcohol (RSA), especially since the introduction of the ARM system, the decrease in customers contacted for RGA or RSA purposes coincided with a general reduction also in risk or 'hot players' alerts, at a time when Casino visitation numbers remained largely stable.

Host responsibility staff at the Adelaide Casino have acknowledged the additional workload that has resulted from the installation and operation of the ARM system, including the need to respond to some 300-500 alerts per months. Many of these alerts are 4-hours alerts to which the host responsibility staff would have responded prior to this response duty being assigned solely to gaming machine staff.

SACES **recommends** that the Casino examine why RGA and RSA targets have not been met, and if staffing levels are adequate for meeting these targets, and ARM response and response times.

6.3.2 ARM system and Pre-Commitment

Adelaide Casino currently operates the ARM system and its pre-commitment system as two separate entities. SACES review of pre-commitment levels suggests that these are typically below those at which the ARM system would trigger risk or 'hot player' alerts. Pre-commitment would therefore complement rather than

overlap with the ARM system. However, as a voluntary tool, pre-commitment is relatively rarely used and, for this reason, its effectiveness as a lower level risk alert system is limited

6.4 Increasing utility

Whilst the purpose of the review was to assess Adelaide Casino's compliance with Skycity's description of the proposed operation of the ARM system, the study also identified areas in which the availability of ARM system data could be further utilised to improve system effectiveness and to enhance general understanding of the nature and risk of problem gambling at the Casino. These include:

- recording and analysis of *both* time spent gambling and bet volumes, especially buy in/drop (i.e. money spent) of players, relating to risk and 'hot player' alerts in order to get a better understanding of how the two gambling risk indicators relate and how they may differ by alert type;
- reviewing time and bet volume thresholds in light of new information resulting from the above analyses;
- linking barring information to the ARM system (noted as an longer term objective in the Skycity application);
- automated linking of alerts to person files (e.g. where a player had previously been case managed), instead of reliance on largely manually conducted desktop review;

The ARM system, and the Casino's loyalty and anonymous (*Ezycard*) card record system are currently not set up in a way that would allow for monitoring change over time. This is understandable given its role as an administrative, not evaluation tool. With a view to facilitating the measurement of impact of the ARM system on problem gambling detection over time, a review of the system's record log functionality may nonetheless be valuable.

6.5 General conclusion

The SACES review of the operations of the ARM system at the Adelaide Casino confirmed their principal compliance with specifications, whilst there remains scope for improving recording and responding to alerts, and making additional use of the available data.

Additional benefits would likely accrue from analysing the data to yield a better understanding of bet volumes, alert frequencies and, ultimately, the social and behavioural (spending) profile of problem gamblers. This should allow the ARM system to be fine-tuned with alert thresholds being tested and, if necessary, adjusted.

SACES expects the benefits but also any weaknesses of the ARM system to become more apparent with time, as the system is fully embedded into the operations of the Adelaide Casino. The effects of risk and 'hot player' alerts, and corresponding actions, on player behaviour should then become more apparent and better understood. This could be assisted by purposely designed data analysis to assess the effect of the system in detecting and mitigating risk and to use this information to inform changes to achieve improved outcomes.

Appendix A

Final list of indicators that might be usefully included in staff training

Frequency Duration and Intensity

1. Gambles every day of the week
2. Gambles for three hours or more without a break of 15 minutes or longer
3. Gambles for 5 or more hours without a break of 15 minutes or longer
4. Gambles so intensely that the person barely reacts to what was going on around him or her
5. Plays very fast (e.g., inserts large numbers of coins into the machine very rapidly, presses the buttons very rapidly so that the spin rate is very fast)
6. Bets $2.50 or more per spin most of the time
7. After winning on poker machines, plays on quickly without even stopping to listen to the music or jingle
8. Rushes from one machine or gaming table to another
9. Gambles on 2 or more machines at once (where this is allowed)
10. Gambles continuously
11. Spends more than $300 in one session of gambling
12. Significant changes in expenditure pattern, e.g., sudden increases in spending

Impaired Control

1. Stops gambling only when the venue is closing
2. Gambles right through usual lunch break or dinner time
3. Finds it difficult to stop gambling at closing time
4. Tries obsessively to win on a particular machine
5. Starts gambling when the venue is opening

Social Behaviours

1. Asked venue staff to not let other people know that they are there
2. Has friends or relatives call or arrive at the venue asking if the person is still there
3. Is rude or impolite to venue staff
4. Avoids contact, communicates very little with anyone else
5. Stays on to gamble while friends leave the venue
6. Become very angry if someone takes the person's favourite machine or spot in the venue
7. Brags about winning or makes a big show relating to how skillful he or she is as a gambler
8. Stands over other players while waiting for his or her favourite machine

Raising Funds/ Chasing Behaviour

1. Gets cash out on 2 or more occasions to gamble using an ATM or EFTPOS at venues
2. Asks to change large notes at venues before gambling
3. Borrows money from other people at venues
4. Asks for a loan or credit from venues
5. Puts large win amounts back into the machine and kept playing
6. Leaves the venue to find money to continue gambling
7. Observed rummaging around in purse or wallet for additional money
8. Appears to have run out of all money including all money in purse or wallet when they leave venue
9. Uses coin machine at least 4 times

Emotional Responses

1. Seen to be shaking (while gambling)
2. Sweats a lot (while gambling)
3. Looks nervous/ edgy (e.g., leg switching, bites lip continuously)
4. Vocally displays anger (e.g., swears to themselves, grunts)
5. Kicks or violently strikes machines with fists
6. Looks very sad or depressed (after gambling)
7. Cries after losing a lot of money
8. Sits with head in hand after losing
9. Plays machine very roughly and aggressively (e.g., with fists or slaps)
10. Groans repeatedly while gambling
11. Shows significant changes in mood during sessions

Other Behaviours

1. Gambles after having drunk a lot of alcohol
2. Appears to avoid cashier- appears evasive- only uses cash facilities
3. Significant decline in personal grooming and/ or appearance over several days

Irrational Attributions / Behaviours

1. Blames venues or machines for losing
2. Complains to staff about losing
3. Swears at machines or venue staff because they are losing
4. Compulsively rubs belly of machine or screen while playing

Source: Delfabbro, P. Osborn, A, Nevile, M,Skelt, L, McMillen J Identifying Problem Gamblers in Gambling Venues: Final Report for Grambling Research Australia (Undated) page 285-86

Appendix B

Independent Gambling Authority
File No. AUTH 14/0056
SKC–ARMS–1.1

Application made by Skycity Adelaide Pty Ltd
ABN 72 082 362 061

for the Approval of an Automated Risk Monitoring System for the purposes of section 40B of the *Casino Act 1997* in accordance with the Gambling Regulation – *Systems Criteria - Prescription Notice 2013*

29 April 2014

Term	Definition
Alerts Officer	A staff member responsible for allocating ARMS alerts.
Anonymous Card	A Player Card linked to a numbered player account, with no associated personal details.
Bally	Bally Technologies Inc. or any related entity with whom SKYCITY Adelaide Pty Ltd (or any of its related entities) has a contract in respect of the automated risk monitoring system.
Card-In	a message sent to the CMS when a Player Card is inserted into a card reader at a Device.
Card-Out	A message sent to the CMS when a Player Card is removed from a card reader at a Device.
CMP	Casino Marketplace (a sub-system of the Bally Casino Management System) primarily focused on Player accounts and related details.
CMS	The overall Casino Management System. The current system operated at the applicant site is supplied by Bally.
Device	An apparatus, or a configuration of apparatuses, which when operated in accordance with directions as to use or terms of approval (however described), constitute approved automated table game equipment or an approved electronic gaming machine.
Exception Code (XC)	A series of numeric codes used as both notifications and prompts (for Device meter polling) in the CMS. A specific code is generated when a particular event occurs – e.g. a device door being opened triggers XC 71 – and that notification may prompt another alert and/or the CMS to record the device meters at that time.
Hot Player	An event which monitors and alerts on bet volume within a specified timeframe. Alerts are triggered by pre-configured threshold values that define a Device as being heavily played.
HRC	Host Responsibility Co-ordinators.
iVISTA	Bally communications hardware, installed at every Device in order to provide an interface between the physical game and the system. Also facilitates the electronic content displayed to the Player.
LFV	Live Floor View - a sub-system of the Bally CMS, used for reporting, highlighting and alerting on current play or Players.
Loyalty Program	Adelaide Casino Loyalty Program.
Player	A person who gambles on a Device at the Adelaide Casino.
Player Card	A card issued by Adelaide Casino to a Player for use in connection with gambling on a Device. This definition includes all Player Cards, which may be enabled for the purpose of account based cashless gaming play as well as for purposes such as the Loyalty Program and Pre-Commitment.
Player Rating	A system record of the key play-related metrics associated with a session of play. Will include (but is not limited to) totals of bets made/wins accrued/time spent.
Pre-Commitment	Bally Voluntary Pre-Commitment.

Risk Alert	An event which monitors and subsequently alerts on the length of a Player session based on the amount of time a Player Card is inserted at a Device.
SDS	Slot Data System (a sub-system of the Bally CMS) which records all Device-specific meter and event increments and is the basis of raw revenue reporting for electronic gaming.
Systems Prescription Notice	Gambling Regulation- Systems Criteria – Prescription Notice 2013 as Gazetted on 18 December 2013.

Note: The screenshots displayed at Figures 1-7 are illustrative examples only and do not form part of the system for recognition. The references to 'carded' and 'uncarded' in the graphics in the screenshots correspond to 'identifiable' and 'not identifiable' play.

Note: Examples inserted into the text do not form part of the system for recognition.

Explanatory Statement

1. The Adelaide Casino Automated Risk Monitoring System (**ARMS**) is an additional harm minimisation tool to be used as an adjunct to the Adelaide Casino Host Responsibility Program. ARMS assists in the identification and management of potential problem gambling behaviour by using Bally Live Floor View functionality to provide real time alerting by Device, based on pre-determined system default limits.

2. The Systems Prescription Notice differentiates between an "identifiable" and a "not identifiable" Player. At Adelaide Casino there are a number of different Player types, with varying degrees of associated identification.

   a. A Player is identifiable when they are using a Player Card at a Device.

      The term Player Card includes any card issued by Adelaide Casino for use in connection with gambling on a Device. This includes (but is not limited to):

      i. a member card used in connection with the Loyalty Program;

      ii. an account based cashless gaming card (transparent- identifiable by name; or anonymous- identifiable by card number); and

      iii. a card issued for Pre-Commitment use.

      Each individual Player Card is linked to a single player record. This means each Player Card may be used for dual purposes, provided that the specific carded functionality is enabled on the record associated with the Player Card.

      i.e. the same single card may be used to accumulate loyalty points, use pre-commitment and for account based cashless gaming. An anonymous card may be used for both account based cashless gaming and Pre-Commitment.

   b. A Player is not identifiable when they are not using a Player Card at a Device. This includes:

      i. A Player who does not have a Player Card;

      ii. A Player who has a Player Card but who chooses not to use, or removes their Player Card from a Device.

Clause 4 – Submission Requirements

Clause 4(1)*(a)* Narrative description

The Adelaide Casino Automated Risk Monitoring System is a functionality established within but is not separate or separable from, the CMS

Casino Management System

The **CMS** is made up of a number of software modules, each designed to manage a specific part of the data requirements of a Casino. These modules can then share or borrow information from each other to provide more insight than might otherwise be obtained from a single data source.

Sub-systems – SDS and CMP

- **SDS**: collates all Device meter movements within a reporting period. All Device play is recorded by SDS and cash-based revenue is reconciled against this system record, independent of any association with a specific player.
- **CMP:** associates play at a Device level with individual Players who use Player Cards, and calculates information such as account balances, loyalty points and stores Player Ratings to be used by the pre-commitment system (as applicable).

Although SDS tracks all play and CMP only tracks identifiable play, both of these Casino sub-systems are reliant on the communication of events that occur at an individual gaming Device by each iVISTA (the communications hub between the game hardware and the systems software).

When a Player inserts a Player Card into a Device the play recorded in CMP will rely on the recognition of the Player Card-In and Card-Out messages, which identify the beginning and end of a session of play and generate ARMS alerts based on session time and spend.

The table below is an example of how a sequence of events could update for identifiable play, displaying an example of the running total for a Player at each point of play on an electronic gaming machine:

Meter reads at the time the example customer inserts their card	Bet Meter Reading	Device "Wins" Meter Read	Jackpots Meter Read	Calculated (Casino) Win
Rating Start	100	75	0	0
"Rating Start" *("Card-In"- initial meter reading)*: This reading sets the starting meters for the card rating. Where the above example Player first inserts their card ("Rating Start"), the bet meter reading (from the previous Player/s) is $100 and the Device "Wins" Meter Read is $75. The Player win for the session is zero because the example customer hasn't played yet.				

A player-specific current position can be calculated at any point by subtracting these opening meters from the current readings, and applying the basic Metered Win equation: ***Bets - "Wins" - Jackpots = Casino Win.***

Events during play	Amount bet by example customer	Bet Meter Reading (running total)	"Wins" by example customer	Device "Wins" Meter Read (running total)	Jackpots Meter Read (running total)	Calculated (Casino) Win by example customer
Regular Poll	**50**	150	**40**	115	0	**10**
Example customer hits Jackpot	**100**	200	**80**	155	**50**	**-30**
Card Out ("Rating End")	**200**	300	**125**	200	**50**	**25**

"Regular Poll": Adding to the meter read at "Rating Start" in the table above, at "Regular Poll" the example Player has now bet $50 and won $40 – meaning they have a net loss of $10 (and therefore a Casino Win of $10).

"Jackpot": When the jackpot is hit the example Player has bet a total of $100 ($200 minus the initial meter reading of $100). The example Player has won $80 (155 minus 75) and also a $50 jackpot, so the calculated Casino Win is minus $30 (the Player has won $30).

"Rating End" *("Card-Out"- final meter reading)*: When the example Player takes their card out, the final meter read for that Device is polled by SDS. The Player has the following totals as- (Bets $200; Wins $125; Jackpot $50= Casino Win of $25).

Along with the above, CMP will record the:

- duration of play;
- specific location of the Device;
- date and time at which the rating occurred; and
- other details associated with the Player Card such as loyalty tier (if applicable).

Sub-systems – Bally Live Floor View – delivering ARMS functionality for all Players

Adelaide Casino will use LFV to configure ARMS thresholds according to the length of a player session (identifiable) or bet volume within a specified time (identifiable and not identifiable)) to apply to a Device session. When a 'potentially at risk' threshold is reached, an email ARMS alert will be generated and sent to the Alerts Officer on duty.

- **Live Floor View** is capable of monitoring play against generic, default system criteria set by Adelaide Casino. LFV collates gaming activity from each Device and allows for both the visual representation of the data in real-time, and the generation of email alerts. It does this by drawing on relevant information from CMP and SDS, while applying its own configurable filters and logic to the data. These alerts are based on system-wide configuration – there is no ability in the Bally system to tailor alerts to specific areas or individuals beyond whether a Player is identifiable

or not identifiable.

Different ARMS thresholds for identifiable and not identifiable spend are able to be configured in the system and will be utilised by the applicant. Because not identifiable Player alerts only relate to a single Device session, the default ARMS spend threshold will be lower than an identifiable Player spend threshold, because the ARMS threshold for identifiable play is configurable to include multiple sessions of play across the specified time span.

ARMS alerts are received via smartphone, to be managed as set out in the user documentation. In summary:

- ARMS alerts will be sent to the Alerts Officer on duty (ordinarily either the duty Gaming Machines or Table Games Supervisor);
- Upon receipt of the ARMS alert the Alerts Officer will allocate the alert to an appropriately trained staff member in the area where the Device is located, who will attend the Device and observe the Player; and
- Following observation, the staff member will sign off on the ARMS alert or escalate it (as appropriate).

Live Floor View Screenshot Overview

The graphic displayed in Figure 1 is the commonly viewed front-end of LFV, but notably does not need to be displayed or viewed live for alerts to be created or broadcast. As pictured below, LFV enables staff to view the association of play with a specific Device.

Figure 1. Live Floor View

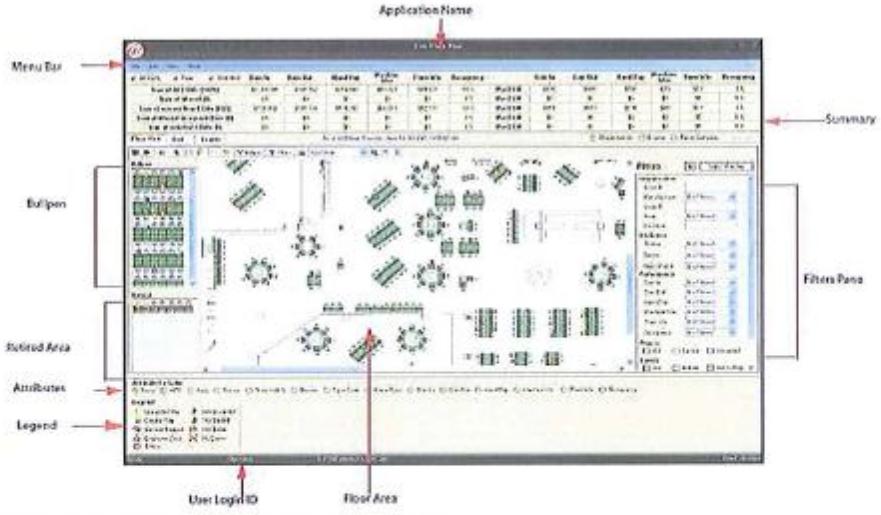
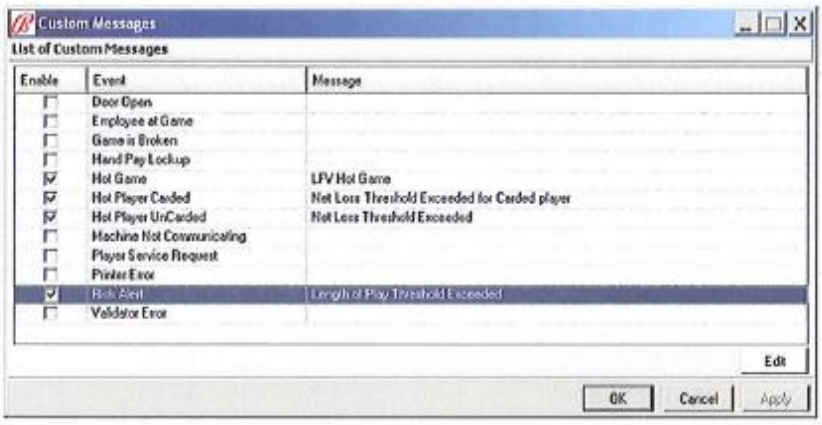


Figure 2. configuration of an event in LFV

LFV allows the operator to configure and broadcast alerts based on different metrics or "events" that can occur on the gaming floor. These options are illustrated below, via the custom messages window.



Most of the available alert options in LFV are communicated from a Device or prompted by an event or sequence of events at a particular Device.

Unlike other events which are driven by SDS Exception Codes, the Risk Alert and Hot Player alerts utilised for ARMS are calculated in LFV.

- The **Risk Alert** event monitors and subsequently alerts on the *length of a player session* based on the amount of time a Player Card is inserted at the Device. The ARMS threshold for this time period can be configured in LFV as a specified number of seconds. Where a Player session at a single device exceeds the configured number of seconds, an alert will be generated. This type of alerting is generated based on a period of time between the Card-In and Card-Out messages, so is only able to be applied to identifiable play.

  N.B. For example, the Adelaide Casino is currently operating with this set to 14,400 seconds (4 hours).

- **Hot Player** alerts are triggered by ARMS threshold values that define a Device as being heavily played. The premise of these alerts is to show *bet volume in a specified time*. This can be extrapolated to indicate Player loss if the bet volume is multiplied by a theoretical or standard hold percentage.

  N.B. For example, $1000 bet at a theoretical 10% casino hold indicates a $100 Player loss.

  The generation of a Hot Player alert for bet volume is contingent on the associated configured time period. This time period is specified in minutes for each Hot Player alert type configured and is calculated separately to the Risk Alert time.

  A Player will only generate an alert where they have turnover above the configured ARMS threshold during a continuous period of less than the associated configured time.

  N.B. for example:

  - a Hot Player spend alert for identifiable play - $40,000 turnover over 3 hours (i.e. $4,000 loss at 10% theoretical casino hold);

  - a Hot Player spend alert for not identifiable play - $20,000 turnover over 3 hours (i.e. $2,000 loss at 10% theoretical casino hold).

Live Floor View provides three separate Hot Player options for defining and alerting on bet volume within a specified time, which are set out in detail under Figures 5 and 6.

Figure 3. Custom Message screen

As illustrated below, from the Risk Alert screen the choice can be made to check the "include" button on the custom-message box and include further text to explain the reason for the alert.

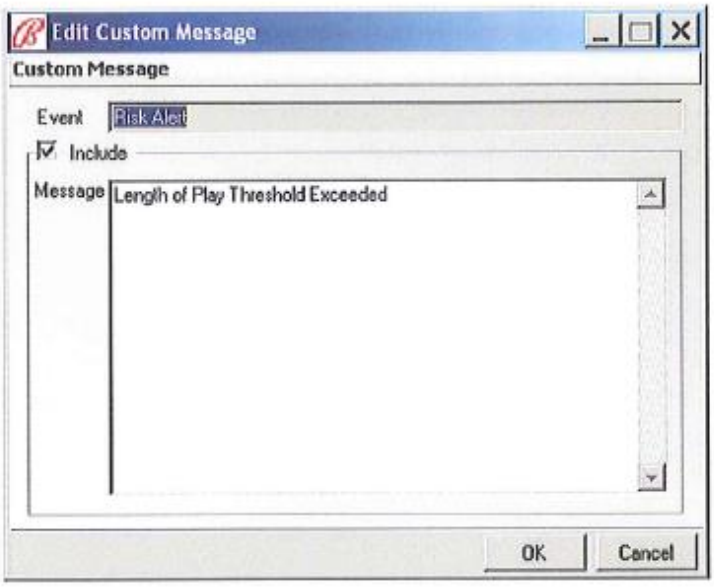
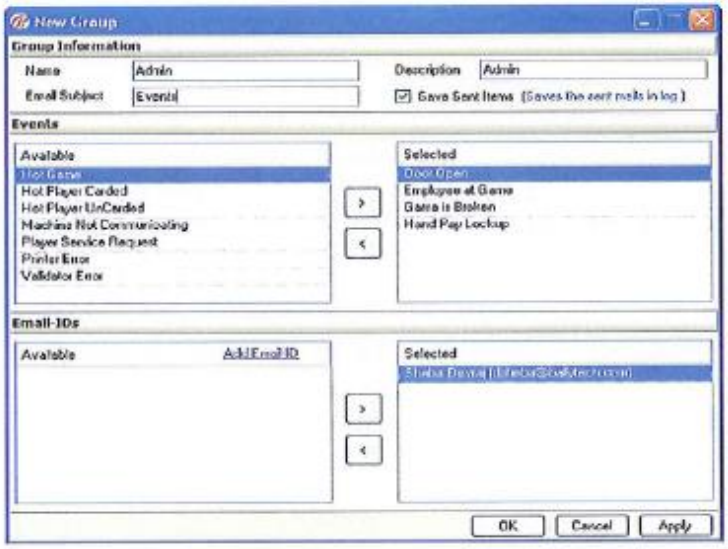


Figure 4. Administration Menu

In the Administration menu, any available system specified event can be selected, and the email distribution list for the broadcast of each alert (where a particular event has occurred) can be edited.



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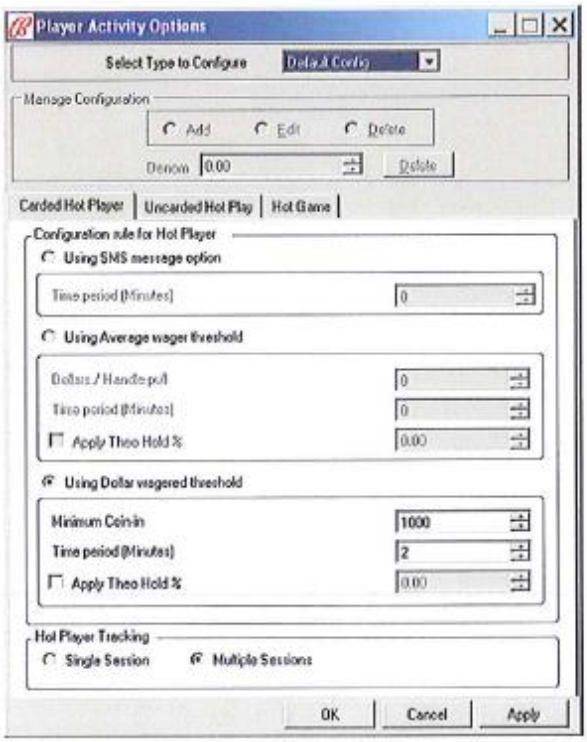
For example, in the graphic in Figure 4, Sheba Devraj is specified in the email distribution list to be emailed when a Device main door is opened.

All ARMS alerts generated are emailed to a centralised internal email address and are received via smart phone. In most cases, the generation of this email alert will take less than one minute.

The response time from the generation of an ARMS alert to the attendance of a staff member at a Device will be managed by the Alerts Officer on duty (usually a Gaming Machines or Table Games Supervisor). Upon receipt of the alert the Alerts Officer will allocate the alert to an appropriately trained staff member in the area where the Device is located, who will attend the Device and observe the Player. The staff member will indicate that the call has been responded to by inserting his or her identification card in a nearby Device. In most cases, the response time from the allocation of the alert to attendance at the machine will be 5-15 minutes.

Figure 5. Identifiable play ARMS threshold setup screen

The tab displayed below contains a number of configuration options and sub-settings. LFV provides three separate options for defining and generating a Hot Player alert, depending on whether the focus is on the Player (identifiable or not identifiable) or on the Device (or game). These options dictate how LFV defines a Hot Player event and subsequently, when alerts are sent.



1. **The "Using SMS[1] message option" in Figure 5** relates to an Exception Code message in SDS.

   Where the SMS option is used, LFV's recognition of a Player's status is based solely on its receipt of an SDS specific code (XC 8) signifying that the Player is above the minimum parameter as configured in SDS.

2. **The "Using Average wager threshold" in Figure 5** offers two options, each intended to allow a more flexible approach to defining Player activity:

   The first simply applies an average bet value – dividing the Player total bet by the number of spins they have played in a given time period.

   The "Apply Theo Hold %" checkbox provides the option to apply a more accurate calculation of the Player spend by multiplying the bet value by a specified theoretical (average) hold percentage of the given game. Because this option only collates data for games where the specific Device has a theoretical hold percentage (which is the same as the percentage specified against the checkbox) it will not be used by the applicant because the use of this option would have the effect of eliminating the majority of devices.

3. **The "Using Dollar Wagered threshold" in Figure 5** does not focus on an average. Instead, it collates the total bet value of the particular Player over the specified (continuous) time period and generates alerts accordingly.

4. **Additional option: thresholds for multiple sessions of identifiable play**

   The "Hot Player Tracking" configuration in Figure 5 provides an additional option: whether to apply the designated thresholds against a "Single" Device Session or "Multiple" Device Sessions.

   The "Single" Device session option only applies to play since the commencement of the session at the Device currently being played.

   The "Multiple" Device sessions option applies to all Devices played by the specific Player during the specified time period. For the purposes of Clause 6(2)(b) of the Systems Prescription Notice, where the "Multiple" sessions option is checked, LFV is capable of regarding all play that is logged to the Player Card as an extended session of play. The Card-Out message at each individual Device is logged against the Player record in CMP. Each of the "Single" Device concluded sessions of play are then combined and measured against the coin-in threshold.

   N.B. an example of this parameter is $40,000 over 3 hours – reflecting a theoretical player loss of $4,000.

Figure 6. Not identifiable play ARMS threshold setup screen

The not identifiable configuration options are shown in the same way as those described above for the identifiable Hot Player set-up, with two exceptions.

Firstly, there is no option to link "Multiple" sessions of not identifiable play. This is because the system does not have a way of holding or parking a specific Player's data when that Player is not playing, or of identifying that Player when they subsequently

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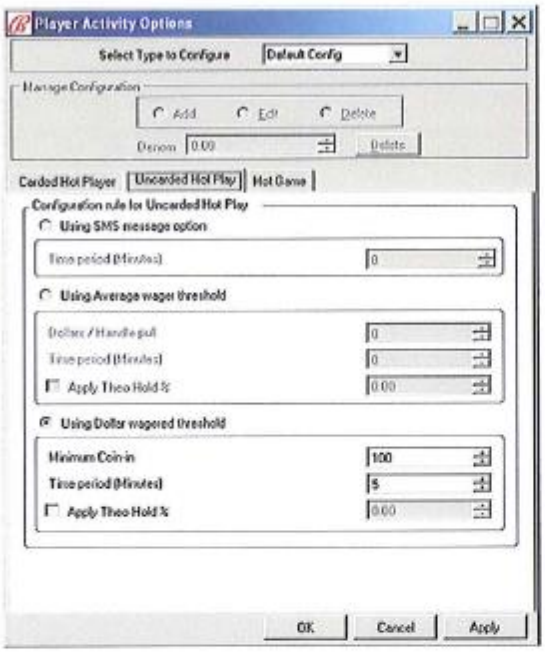
[1] N.B. SMS stands for "Slot Management System" (Bally operates two different SMS's, of which SDS is the one used by Adelaide Casino).

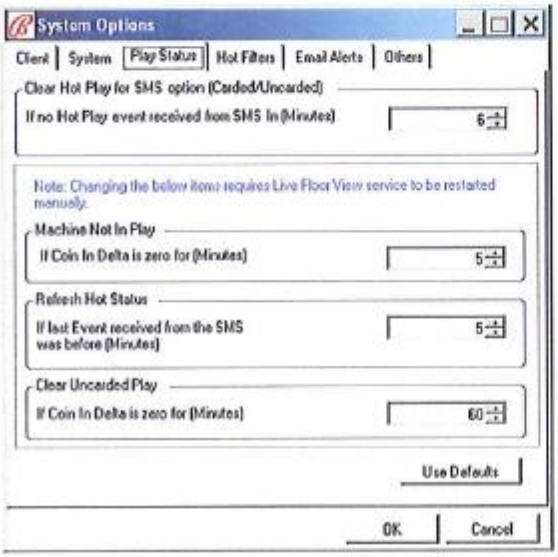
start playing a new Device. Therefore, for not identifiable Players the system is unable to re-allocate previous play in addition to a current session of play.

N.B. for example, this parameter is currently set to $20,000 over 3 hours – reflecting a theoretical player loss of $2,000 with an underlying session-reset time of one minute.



Secondly, because there is no Card-In event to initiate a session of play, an alternative parameter must apply. As illustrated in Figure 6a, the calculation of a not identifiable Device session is reliant on a configurable period of inactivity at the game, based on bets not being placed.

Figure 6a: Determining Player status for not identifiable play



The "Clear Uncarded Play" option in the above graphic defines a not identifiable player session. Where no activity has occurred on the "Coin In" (bets/turnover) meter for the specified period of time, LFV clears the data and considers that a new Player has started playing the Device when a new session of play commences.

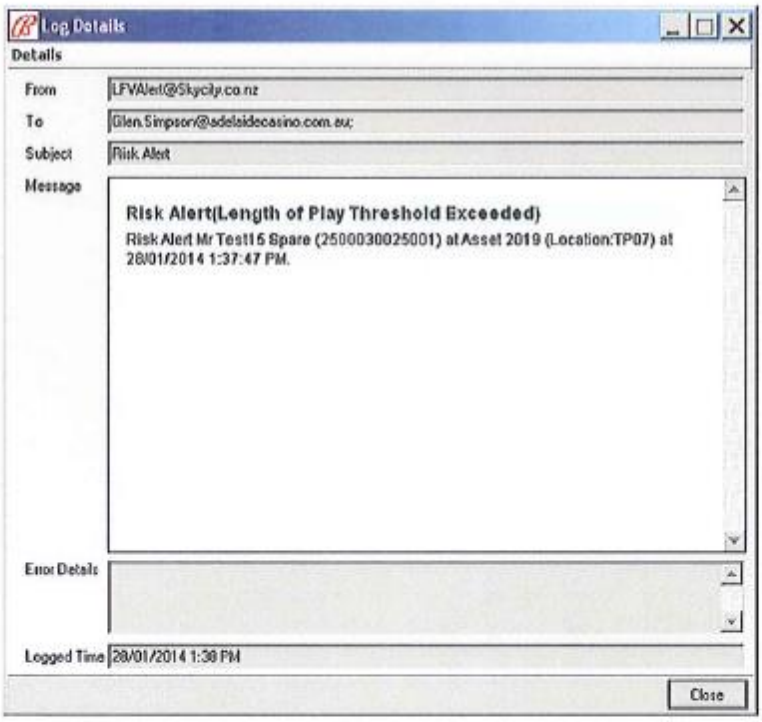
A suitable setting for this parameter will depend on the intended use of alerts and on the number of patrons in the Casino at the time. If it is set too high (too long of a time), there is the potential for not identifiable play to be mistakenly attributed to the previous Player at the Device. If the time period if too short, a normal pause in play will result in the individual Player session being considered two sessions by LFV.

N.B. for example, this parameter is currently set to one minute.

Figure 7: Alert Log

The graphic below shows the layout of the actual alert distributed when an alert is generated.

The subject and first line of the text box will be standard to all alerts of that type. However, the appended details in the text box add value- these show (as applicable) the Patron Name, Card Number, Device Asset Number, Device location and the date and time the alert was generated.



Clause 4(1)*(b)* a listing of:

Clause 4(1)*(b)*(i) ***the required hardware and software;***

Application Servers[2]	Operating[3] System	Bally Release for Cashless/ARMS[4]
Live Floor View Server (ARMS)	Windows 2008 R2 SP1	LFV 12.4.1 TS4 EP1
SDS Server 1	Windows 2008 R2 SP1	12.3.4 SP2 TS29
SDS Server 2	Windows 2008 R2 SP1	12.3.4 SP2 TS29
CMP and Cage Server 1	Windows 2008 R2 SP1	CMP 12.3.1 TS25 EP2 Cage 12.3.1 SP1
CMP and Cage Server 2	Windows 2008 R2 SP1	CMP 12.3.1 TS25 EP2 Cage 12.3.1 SP1
Kiosk Server	Windows 2008 R2 SP1	No further software required to operate
Pre-Commitment Server 1	Windows 2008 R2 SP1	PC 12.5.3 SP2
Pre-Commitment Server 2	Windows 2008 R2 SP1	PC 12.5.3 SP2
STC Server Server 1	Windows 2008 R2 SP1	STC 12.3.4 TS1
STC Server Server 2	Windows 2008 R2 SP1	STC 12.3.4 TS1
CMP/SDS BIG Interface Server	Windows 2008 R2 SP1	12.0.3

Clause 4(1)*(b)*(ii) ***the end-user cost structure;***

Because Adelaide Casino has commissioned ARMS itself, the end user cost structure for ARMS is internally absorbed.

Clause 4(1)*(b)*(iii) ***the individuals or corporate entities which will provide the relevant system to licensees***

Bally provide the LFV alerting functionality for ARMS to Adelaide Casino.

Clause 4(1)*(c)* a statement as to relevant intellectual property licensing matters;

Bally own both the Bally software used to operate ARMS and the associated IP rights. There is not sufficient novelty associated with this ARMS itself to vest separate IP rights to the system.

[2] The servers listed above include all later compatible versions.

[3] The operating system listed above includes all later compatible versions.

[4] The Bally releases listed above include later releases retaining the function of that module.

Clause 4(1)*(d)*	certification as to the automated risk monitoring system's capacity for connection to the monitoring system;
	A copy of the certification has been supplied.
Clause 4(1)*(e)*	a statement as to the capacity for the automated risk monitoring system to operate over more than one venue;
	The specificity of this automated risk monitoring system to Adelaide Casino means it does not have the capacity to operate across more than one venue.
Clause 4(1)*(f)*	a declaration as to the components of the automated risk monitoring system which do not conform to the criteria set out in the Systems Prescription Notice
Clause 6(1)*(b)*(i)	The Adelaide Casino ARMS cannot conform to the criteria set out at Clause 6(1)*(b)*(i) of the Systems Prescription Notice.
Clause 4(2)	Undertakings to the Authority and to the Minister
	The undertakings to the Authority and to the Minister have been provided.
Clause 4(3)	Proposed user documentation
	A copy of the proposed Adelaide Casino ARMS user documentation has been supplied.

Clause 6 – Attributes – Automated Risk Monitoring Systems

Clause 6(1)	In order for an automated risk monitoring system to be recognised, the system must feature -
Clause 6(1)*(a)*	the capacity to communicate with an account based cashless gaming system;
	The Adelaide Casino ARMS has this capacity- all Player Cards (of which the definition includes cards linked to an account based cashless gaming account) will communicate with ARMS on the basis that ARMS alerts are associated with Player Cards via information shared with CMP.
	The specific requirement in Clause 6(1)*(a)* to associate activity on an individual cashless gaming account with activity on an individual device deployed in Adelaide Casino will be met when account based cashless gaming is operational. When account based cashless gaming is operative, all Player Cards will have the capacity to be enabled for account based cashless gaming and, if enabled and inserted at a Device, activity on an individual device will be associated with the individual cashless gaming account linked to that Player Card.

Clause 6(1)*(b)*(i)	the capacity to communicate with systems (in addition to an account based cashless gaming system) reasonably available or accessible… player information; or

The Adelaide Casino ARMS has this capacity to the extent detailed below.

Adelaide Casino Loyalty Program Data

Separate CMS modules are generally not forced to interact with each other all of the time. However, in some instances there can be sharing of information between LFV (the functionality creating the ARMS alerts) and CMP (the sub-system that maintains all Player account records for all types of Player Cards). As explained at Figure 7, the alert log will display any Player information available from CMP.

Information about barring orders

Whilst ARMS has the capacity to communicate with the internal Adelaide Casino barring database, this functionality is not available in ARMS automatically due to technical limitations. In addition, the centralised barring database to be rolled out by the Authority is scheduled to be deployed on or before 1 July 2014.

Staff will not receive alerting regarding barring directly through ARMS. However, casino staff have the ability to check Player details manually if a person is using a Player Card and is a member of the Loyalty Program.

Clause 6(1)*(b)*(ii)	the capacity to communicate with systems (in addition to an account based cashless gaming system) reasonably available or accessible… loss limits.

The Adelaide Casino ARMS has this capacity.

Pre-Commitment- a tool to voluntarily set loss limits or other indicators

The approved Pre-Commitment system monitors a particular Player and their progress towards personal, individually set limits for Player loss and playing time.

Pre-Commitment is also utilised by HRC as an additional tool to monitor potential problem gambling.

ARMS builds on the Pre-Commitment functionality by providing staff with alerting for all customers in addition to any personal limits set by a Player.

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Clause 6(1)*(c)*	The capacity for staff to manually, or with system assistance, associate play on a particular Device with a particular Player (whether or not the Player is identifiable)	
	The Adelaide Casino ARMS has this capacity to the extent detailed below.	
	Identifiable play	
	As set out in the Explanatory Statement, it is possible to associate play on a particular Device with a particular Player if the Player is using a Player Card.	
	Not identifiable play	
	Because there is no Card-In message to initiate a session of play, the association of not identifiable play on a particular Device with a particular Player is achieved by a configurable period of inactivity at the game on the Device bet meter.	
	Manual association is impractical in a venue as large as Adelaide Casino, except in the rare instance when an alert is generated and received by an Alerts Officer who happens to be near a particular Player on a particular Device.	
Clause 6(2)	In order for an automated risk monitoring system to be recognised, concerning identifying indicators of potential problem gambling behaviour, the system must include -	
Clause 6(2)*(a)*	Criteria to determine the commencement and conclusion of a session of play on a device (whether or not the player is identifiable)	
	The Adelaide Casino ARMS has this capacity to the extent detailed below.	
	Identifiable play	
	The criteria to determine the commencement and conclusion of an identifiable session of play on a Device will be determined based on Card-In and Card-Out messages.	
	Not identifiable play	
	The criteria to determine the commencement and conclusion of a not identifiable session of play on a Device will be determined based on a default period of inactivity on the Device bet meter. This will be set by Adelaide Casino and will be monitored and adjusted over time. As explained at Figure 6a, a suitable setting for this parameter will depend on the intended use of alerts and on the number of patrons in the Casino at the time. If it is set too high (too long of a time), there is the potential for not identifiable play to be mistakenly attributed to the previous Player at the Device. If the time period if too short, a normal pause in play will result in the individual Player session being considered two sessions by LFV.	

Clause 6(2)*(b)*	Criteria to determine when a new session of play should be regarded as an extension of a concluded session of play, whether or not at the same Device and whether or not the Player is identifiable
	The Adelaide Casino ARMS has this capacity to the extent detailed below.
	Identifiable play
	Identifiable play is extracted from CMP upon the Card-In message, and updated in near-real-time based on configurable update settings within the monitoring module in CMS.
	The screen in LFV illustrated in Figure 5 demonstrates how a new session of play may be regarded as an extension of a concluded session of play for identifiable play – essentially that any sessions occurring in the specified time span are associated with each other as an extended session for the purposes of alerting.
	Not identifiable play
	This functionality is not possible for not identifiable play.
Clause 6(2)*(c)*	Operator configurable criteria to generate alerts when a session of play (including a session of play which is an extension of a concluded session of play)
Clause 6(2)*(c)*(i)	reaches a certain length; or
Clause 6(2)*(c)*(ii)	involves a certain net gambling outcome
	The Adelaide Casino ARMS has this capacity to the extent detailed below.
	The Adelaide Casino ARMS has operator configurable criteria to generate alerts when a session of play reaches a certain length or involves a certain net gambling outcome are set in LFV for both identifiable and not identifiable Players based on default limits.
	However, the second criterion of Clause 6(2)*(c)* - ("including a session of play which is an extension of a concluded session of play") is not possible for a not identifiable Player.
Clause 6(3)	In order for an automated risk monitoring system to be recognised -
Clause 6(3)*(a)*	concerning connection to the monitoring system- the system must be capable of communicating with the monitoring system in a manner which is secure and which does not compromise the integrity of the monitoring system; and
	The Adelaide Casino ARMS has this capacity.
	Communication of ARMS-related information is by the same method and network as all intra-CMS communication. This is considered secure by both Adelaide Casino and independent Accredited Testing Facilities who test and sign off each release of the CMS software as continuing to be compliant, which is

	subsequently used by CBS to determine regulatory compliance.
Clause 6(3)*(b)*	the system must be capable of communicating with all the devices in the venue and with terminals intended to be used by staff.
	The Adelaide Casino ARMS has this capacity.
	Because the Adelaide Casino ARMS solution leverages the system backbone of the CMS, its communication is linked with every Device communicating with the CMS. All live Devices must communicate with the CMS in order to fulfil regulatory and financial reporting requirements.
	Where other terminals are used by staff, access to LFV is decided based on an employee's role. Access to the user interface of the application is controlled by normal IT procedure and sign-off – but is technically available to any permitted staff member via any enabled computer terminal. However, a staff member does not need direct access to the LFV application itself in order to be the recipient of ARMS alerts.
Clause 6(4)	Proposed user documentation
	The proposed user documentation submitted for an automated risk monitoring system under clause 4(3) must-
(a)	enable a person who has received recognised basic training to operate the system after having been instructed in the documentation; and
(b)	explain how the system can be used to identify opportunities for intervention.
	The applicant has submitted the proposed user documentation.
	The user documentation provided includes the process for the initial handling of alerts and an excerpt of the current HRC procedures that will be part of the ARMS escalation process specific to Adelaide Casino.
	The user documentation will be the subject of ongoing review and will be developed with the training program post implementation. An updated version will be provided to the Authority by October 2014.

Clause 7– Non- Conforming Applications

Clause 7(1)	The Authority may consider an application in respect of a system which does not have all of the attributes this notice requires the system to have in order to be recognised.
Clause 7(2)	An application referred to in sub-clause (1) must explain the extent of non-conformity by reference to technical limitations, or other mitigating factors, which, if accepted by the Authority, would justify the system being recognised despite the non-conformity.

Clause 7(3)	Without limiting the matters which might explain non-conformity for the purposes of sub-clause (2), the following should be explained:
Clause 7(3)*(a)*	whether further time for technical development would allow for the proposed system to confirm in the future and, if so, when; and
Clause 7(3)*(b)*	whether technical factors beyond the control of the applicant give rise to the non-conformity and, if so, how those factors might be overcome in time.
Clause 6(1)*(b)*(i)	The Adelaide Casino ARMS does not currently have the attributes required to conform with Clause 6(1)*(b)*(i) of the Systems Prescription Notice. Although information about barring orders may be accessed manually, and manually set alerts can be generated where the Player Cards of barred or HRC monitored customers are entered, ARMS does not automatically communicate with barring orders information due to technical limitations. Adelaide Casino anticipates that ARMS will be able to access Player information regarding barring orders as required by Clause 6(1)*(b)*(i) of the Systems Prescription Notice following systems development, by 1 July 2015, after the deployment of the Authority barring database (on the basis that the Authority barring database is deployed on or before 1 July 2014).

Clause 8– Transitional

Clause 6(1)*(c)*	the capacity for staff to manually, or with systems assistance, associate play on a particular device with a particular player (whether or not the player is identifiable) **A system is to be regarded as compliant with Clause 6(1)*(c)* in respect of a player who is not identifiable if an undertaking is given to use all reasonable endeavours to use all reasonable endeavours to ensure the necessary functionality by 31 December 2018** Although ARMS alerts will still be generated for Players who are not identifiable to provide staff with an additional prompt and assessment tool, ARMS cannot associate not identifiable play at a device with a particular player, other than by a broad assumption based on a period of inactivity. This technical limitation is as a result of decisions as to functionality made by software providers and is beyond the control of Adelaide Casino. However Adelaide Casino will request that our systems provider develops the systems capability to achieve this functionality by 31 December 2018.

Clause 6(2)*(b)*	Criteria to suggest when a new session of play should be regarded as an extension of a concluded session of play, whether or not on the same device and whether or not the player is identifiable
	A system is to be regarded as compliant with Clause 6(2)*(b)* in respect of a player who is not identifiable if an undertaking is given to use all reasonable endeavours to ensure the necessary functionality by 31 December 2018
	The ARMS cannot determine when a session of play is an extension of a concluded session of play for not identifiable play because of technical limitations. Because there are no Card-In or Card-Out messages, ARMS cannot determine when a not identifiable Player has taken a break and returned to a machine after a break, or switched Devices. The size of the Adelaide Casino and the number of customers is a mitigating factor because staff are not able to track each and every customer manually.
	Therefore, although staff observe Players at the Adelaide Casino throughout a visit, alerts for not identifiable Players are generated from single Device sessions only (based on a default period of inactivity at a Device).
	Adelaide Casino will request that our systems provider develops the systems capability to achieve this functionality by 31 December 2018.
Clause 6(2)*(c)*	Operator configurable criteria to generate alerts when a session of play (including a session of play which is an extension of a concluded session of play)-
Clause 6(2)*(c)*(i)	reaches a certain length; or
Clause 6(2)*(c)*(ii)	involves a certain net gambling outcome.
	A system is to be regarded as compliant with Clause 6(2)(c) in respect of an extension of a concluded session of play if an undertaking is given to use all reasonable endeavours to ensure the necessary functionality by 31 December 2018.
	The second criterion of Clause 6(2)*(c)*- "including a session of play which is an extension of a concluded session of play" is not possible for a not identifiable Player due to the same technical limitations specified at Clause 6(2)*(b)* above.
	Adelaide Casino will request that our systems provider develops the systems capability to achieve this functionality by 31 December 2018.