

**THE INCONVENIENT TRUTH OF G2S ADOPTION**

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# **WHITE PAPER**

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**GAMING STANDARDS**



**A S S O C I A T I O N**

## Why G2S Has Not Been As Widely Adopted As Expected

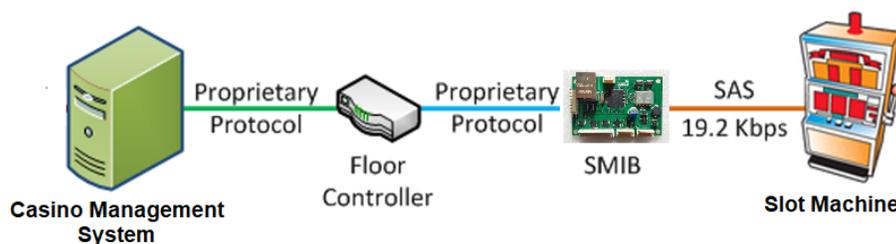
As the saying goes, money makes the world go around. It is money, or the potential for losing revenue, that has caused Gaming Suppliers not to willingly and globally adopt G2S. However, before going into details it is important to first understand why G2S is so much better than SAS.

The SAS protocol was developed over three decades ago in the era before the internet was invented before true networks were invented, and before data security was a real need. This is in sharp contrast with G2S that was developed using technology that is currently widely used in internet banking and internet commerce, supports true broadband networks, and has data security through encryption, built in.

The table below provides a quick glance top level comparison between SAS and G2S

Description	SAS	G2S
Extensible – can have functionality added to support innovation without breaking backwards compatibility.	NO	YES
Securely communicates data.	NO	YES
Supports collecting and transmitting all the data slot machines generate.	NO	YES
Supports high-speed broadband networks using TCP/IP.	NO	YES
Supports having multiple systems connected to and communicating with each slot machine.	LIMITED	UNLIMITED
Provides a full inventory of software and firmware, including version number, for each slot machine.	NO	YES
Provides a method to automatically and remotely (don't have to be physically on the casino floor) authenticate and verify slot machine critical software.	NO	YES

So, given how much more capability G2S has why has not the world jumped to adopt it. To understand the reasons behind this we must first understand how the SAS slot machine to Casino Management System (CMS) ecosystem works.



The SAS slot floor ecosystem is comprised of the slot, a Slot Machine Interface Board (SMIB), an optional Floor Controller and the Casino Management System (CMS).

The CMS, optional Floor Controller and SMIB are sold by the System Supplier as part of a system solution. The slot machine is sold by Gaming Manufacturers. Many Gaming Manufacturers are also System Suppliers, but not all are.

There is a common misunderstanding that Casino Management Systems use SAS. This is not correct. The only components within this ecosystem that use SAS are the slot machine and the SMIB. The SMIB is a protocol translator, translating SAS into the Proprietary Protocol used by the Floor Controller and CMS.

## **Now Let's Follow The Money**

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SAS being an old protocol, has been developed by Gaming Manufacturers for years. Since it has changed very little over the three decades, there has been very little investment in money needed from these Manufacturers. In other words, it is a fixed cost and they know how to develop it quickly, cheaply and effectively.

The System Suppliers have been developing SMIBs since when SAS was originally invented. The SMIBs back then acted as the serial communication device because slot machines did not have that capability. Over time System Suppliers have added functionality to SMIBs to control User Displays, Keyboards, Card Readers, Printers, Bill validators, etc. The SMIB today is, in addition to a protocol translator, a Peripheral Device Controller. That is why System Suppliers charge thousands of dollars per SMIB.

Since the slot machine sends SAS to the SMIB and the SMIB translates SAS to the CMS proprietary protocol, and since SAS can only support one or two systems connected to it, all of the functionality that a casino operator needs to run the casino must be part of, or connect to, the CMS. This means that all innovation is controlled, to a variety of extent, by the CMS supplier.

As a friend of mine Faruk, pointed out, this is like you wanting ESPN. You can only get it from your Cable Company and must pay whatever they charge. You cannot simply connect another Cable Company's device to your TV and get only ESPN from them! The CMS suppliers have created the same monopoly.

## **Why Do System Providers Consider G2S Such a Threat?**

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Well, G2S supports having an almost unlimited number of systems connected to each slot machine. This breaks the monopoly that the CMS suppliers have. In the Cable Company example, G2S allows consumers to get any channel from any supplier. In the casino world, that would allow casino operators to shop the marketplace for solutions such as Marketing Systems, Analytics Systems, Maintenance Systems, Monitoring Systems, Signage Systems, Progressive Systems, etc. and not be forced to buy these solutions from the CMS supplier.

G2S breaks that monopoly that CMS suppliers have today and will, eventually, impact the amount of revenue they will generate because they will be forced to compete with companies that focus on a single solution. Companies that may be more responsive to casino operator needs, and may deliver better functionality, faster and cheaper than the CMS suppliers.

Ironically, CMS suppliers will still be able to make lots of money from the sale of SMIBs if slot machines all used G2S rather than SAS. Instead of the SMIBs translating SAS to the CMS proprietary protocol, the SMIB would translate G2S to the CMS proprietary protocol.

## **Why Are Game Manufacturers Not Implementing G2S?**

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Once again this is simple economics. Game Manufacturers are in the business of developing slot machine cabinets and slot machine content, better known as games. Casino operators, namely the Casino Floor management (VP of Operations, VP of Slots, Slot Director or Performance Manager) is responsible for maximizing the revenue generated through those slot machines. They do this by purchasing the most popular and profitable slot machines and content. They do not care about technology! They don't take into consideration SAS versus G2S, data security, data transmission speeds, access to additional data, increased flexibility, or even risk management. They only focus on revenue generation.

Since casino operators do not demand G2S, game manufacturers do not develop it. They are happy to use the same old SAS protocol, which again has changed little over a decade, and focus their energy on developing creative, compelling and competitive content!

## **How Do We Change This?**

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The key to change lies with the regulators and casino operators.

The regulators need to understand that SAS has zero data security. To compensate for this, lots of physical things have been added. Locked, metal CPU compartments, notifications of when software is going to change, requiring slot floor isolated networks, not allowing slot machines to connect to the internet, and a myriad other band-aids!

The regulators also need to understand that they can get much more data transparency relative to the integrity of the software running in slot machines via G2S. In addition, G2S allows them to connect a separate Monitoring System to provide better oversight of slot machines.

Casino operators beyond Casino Floor management need to be engaged in the CMS and slot machine purchasing decisions. The CMS and slot machine are technology and complicated technology at that. Therefore, the Chief Information or Chief Technology Officer needs to be involved. Since today business understand that data is the key to growth, and since data analytics is usually within the control of Finance or Marketing, the Chief Financial and / or Chief Marketing Officer needs to be involved. If the CIO / CTO and CFO / CMO are included in the purchasing decisions, they will demand G2S over SAS.

G2S allows the CIO / CTO to utilize all the tools they use to secure and manage their back-of house networks and deploy that to the much more critical casino floor network. The CFO / CMO can gain access to all the data slot machines generate and deploy analytical, marketing, promotional tools that provide them better management and revenue generation capabilities.

Getting these individuals to understand what G2S provides and why it has not been adopted is truly the only way we can achieve broad adoption of this powerful and future-proof technology.

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