

Smart Table Systems: A Comparative *Analysis*.

PJM RFID-Based vs AI Camera & Mode 3 RFID Hybrid.

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Two architectures now dominate the smart-table market, and the choice between them is a decade-long bet on how a casino floor is digitised. This analysis compares them on two planes — a tangible comparison of systems and architecture, and an intangible comparison of business impact and strategic roadmap — breaking each dimension into its constituent sub-categories.

HEADLINE FINDING

- 01 The two architectures are at parity on the money question. Both put RFID in the chips and both track the chip.
- 02 Beyond that shared foundation they diverge. On every sub-category that turns on the bet or the customer, the AI Camera & Mode 3 RFID Hybrid solution is the stronger system — tangible and intangible.
- 03 It is the recommended platform for a modern, multi-game gaming floor.

Two broad architectures now dominate the smart-table market. The **PJM RFID-Based Table/Cage Solution** is built on chip attribution: every chip carries an RFID tag, antennas in the layout read those tags, and the system infers who is playing from the chips a player holds. The **AI Camera & Mode 3 RFID Hybrid Table/Cage Solution** takes a hybrid bet-attribution approach: AI-assisted cameras observe the player and the wager directly, while RFID confirms the chips and the cage inventory.

Throughout this analysis the two are referred to in short form — *PJM RFID-Based* (the chip-attribution system) and *AI Camera + Mode 3 Hybrid* (the hybrid bet-attribution system).

◆ PURPOSE & APPROACH

Two architectures, *two planes of comparison*.

This document compares the two systems on two distinct planes. The **tangible comparison** examines systems and architecture across four dimensions — tracking, technology, operations and data — each broken into its sub-categories. The **intangible comparison** examines business impact and strategic roadmap: cost of ownership, the balance of compliance and customer experience, the leverage of the data, and the strategic roadmap. Each dimension opens with why it matters, states the position of both systems, and closes with a verdict.

COMMON GROUND

Both architectures put RFID in the chips, and both deliver chip-level inventory, chain-of-custody and counterfeit control. On the money question they are at **parity**; chip provenance is the layer chip attribution was built for, and it does it well. What follows is therefore not a question of whether each can track the chip, but of what each can do *beyond* it — on the bet and the customer, where the two architectures diverge.

PART A

Tangible comparison — *systems & architecture*.

The physical and technical reality of each system across four dimensions and their sub-categories. The matrix summarises every sub-category; the sections that follow expand each one in detail.

SUMMARY MATRIX · TANGIBLE

SUB-CATEGORY	PJM RFID-BASED	AI CAMERA + MODE 3 HYBRID	WINNER
SHARED FOUNDATION			
Chip inventory & provenance	Chip-level inventory, chain-of-custody and counterfeit control.	Same chip-level inventory and provenance.	Both
A.1 · TRACKING			
Attribution method	Chip is the identifying object; ownership inferred from chip movement.	AI video identifies the player and the bet directly; RFID confirms chips.	◆AI Hybrid
Player tracking	Fails when chips and identity diverge; not used in VIP or crowded mass tables.	Tracks the human; back-betting and any-position play handled.	◆AI Hybrid
A.2 · TECHNOLOGY			
RFID standard	Proprietary Mode 2 PJM, licensed, single vendor.	Open Mode 3 (GS1), unlicensed, multi-vendor.	◆AI Hybrid
RFID equipment	Single licensed vendor for PJM.	Multiple, competitive sources.	◆AI Hybrid
Chip & cage security	No intake/activation; total-only Fill & Credit; damaged tag cannot be deactivated.	CVCS intake/activation; full lifecycle & location; damaged chips still deactivatable.	◆AI Hybrid
A.3 · OPERATIONS			
Dealer process & layout	Manual buttons, tag-ins, stack splits, altered payout order; layout changes; heavy training.	Invisible; no layout change; standard procedure; side bets handled without extra steps.	◆AI Hybrid
Game speed	Reported 20–30% fewer hands per hour.	Pace maintained; payouts presented automatically.	◆AI Hybrid
A.4 · DATA			
Granularity	Inventory & chain-of-custody; player layer breaks once chips disperse.	Per-wager, per-position, every side bet, buy-in to buy-out, chip quantity, denomination & location.	◆AI Hybrid

SUB-CATEGORY	PJM RFID-BASED	AI CAMERA + MODE 3 HYBRID	WINNER
Fidelity & evidence	Often weighted or estimated; no per-event image library.	Player-true actual play; retained image library per event.	◆ AI Hybrid

A.1 TRACKING

Track the chip, or track the *player*.

WHY IT MATTERS

Accurate attribution of play to the right person is the foundation for ratings, reinvestment, loyalty, AML monitoring and limit-setting. The first question is architectural — what does the system identify; the second is practical — does it hold up in live play. If either fails, every downstream use of the data is compromised.

— A.1.1 • Attribution *method*

◆ PJM RFID-BASED

Relies on chip attribution: PJM RFID embedded in the chip makes the chip the carrier of the play record, and the system reasons about ownership by tracking which chip moved to which box. Identity is bound to the currency itself.

◆ AI CAMERA + MODE 3 HYBRID

Uses a hybrid of AI-powered video and RFID. The Bet Attributor uses camera-assisted pose recognition to observe the player, the wager and the relationship between buy-in and buy-out, so identity and currency are handled as separate layers. The chip is currency; the bet is the unit of meaning.

VERDICT **AI Camera & Mode 3 RFID Hybrid.** Separating identity from currency is the more robust architecture; binding identity to the chip fails wherever the two diverge — which, on a live floor, is most of the time.

— A.1.2 • Player tracking & practical *accuracy*

◆ PJM RFID-BASED

Breaks down whenever chip ownership and player identity diverge: junket runners buy and distribute chips to several VIPs, and paper warrants replace physical chips. In practice the chip-attribution layer is not used in VIP rooms or on crowded mass tables; once chips disperse the system can no longer attribute them, and back bets are often left anonymous or rated manually.

◆ AI CAMERA + MODE 3 HYBRID

Because it tracks the human, it handles back-betting and lets a player bet anywhere on the table, seated or standing, without being constrained to a fixed box — producing accurate per-player turnover and win/loss.

VERDICT **AI Camera & Mode 3 RFID Hybrid.** Tracking the player directly gives a rating that does not break down during ordinary casino behaviour or junket operations.

A.2 TECHNOLOGY

Open standard, or *single vendor*.

WHY IT MATTERS

The RFID standard and the chip itself determine vendor freedom, hardware longevity and the integrity of the cash-equivalent on the floor. A closed standard, a fragile tag, or a cage with no activation step each creates lock-in or security gaps that are expensive to unwind.

— A.2.1 • RFID *standard*

◆ PJM RFID-BASED

Uses proprietary PJM (phase-jitter-modulation) Mode 2 RFID, licensed from a single vendor. The two modes share a frequency but are not interoperable, so the choice commits the operator to one vendor's hardware and roadmap for the life of the chip set.

◆ AI CAMERA + MODE 3 HYBRID

Reads chips on the open Mode 3 GS1 standard — unlicensed and supported by multiple manufacturers — so the operator can multi-source chips and hardware.

VERDICT **AI Camera & Mode 3 RFID Hybrid.** An open, multi-vendor standard preserves choice; the proprietary standard locks the operator to a single supplier.

— A.2.2 • RFID equipment (*reader / antenna*)

◆ PJM RFID-BASED

All reading hardware is controlled by one vendor, suppressing innovation and creating supply-chain risk.

◆ AI CAMERA + MODE 3 HYBRID

The operator can multi-source reading hardware from competitive and innovative vendors.

VERDICT **AI Camera & Mode 3 RFID Hybrid.** Using an open standard mitigates supply-chain risk and may even allow switching solution vendors without changing the entire architecture.

— A.2.3 • Chip & cage *security*

◆ PJM RFID-BASED

Cage systems without an intake/activation step cannot guarantee that stolen, undelivered chips are unusable, and reportedly check only the total amount on Fill and Credit rather than individual tags. With a single identifier, a chip whose tag is damaged cannot be identified or deactivated.

◆ AI CAMERA + MODE 3 HYBRID

The CVCS chip-management system requires intake/activation on delivery: chips leave the factory locked and hold no value until the casino activates them, so chips stolen in transit are worthless. A damaged tag can still be identified and deactivated using the chip's other IDs, and the system maintains full lifecycle status and chip location across cage, float and cabinet.

VERDICT **AI Camera & Mode 3 RFID Hybrid.** Mandatory activation, multi-ID deactivation and full lifecycle tracking deliver a materially stronger security model.

A.3 OPERATIONS

Invisible at the table, or *re-engineered around it*.

WHY IT MATTERS

The technology touches dealing procedure, table layout and game speed. Anything that loads the dealer, forces a change to the layout, or slows the game carries a direct revenue, productivity and integrity cost.

— A.3.1 • Dealer operations & game *process*

◆ PJM RFID-BASED

Re-engineers the game around the technology. Dealers manually press start, end and result buttons, tag shared wagers such as tie and pair, split chip stacks above the antenna read limit, and alter payout order so the rated player is paid last. The table layout itself has to change to support shared-antenna side bets, and some layouts sacrificed a betting box to fit a new side bet. Reported training runs to around 24 hours for pit managers and 8 hours for dealers, plus weeks of post-go-live support; a manager override of payout records has also been flagged as a collusion risk.

◆ AI CAMERA + MODE 3 HYBRID

Runs invisibly and requires no change to the table layout: dealers keep their standard dealing procedure, with no tag-ins, stack splits or new buttons, so they can focus on hosting. It also tracks the full range of side bets accurately at each position without adding any dealer step or any change to the felt.

VERDICT **AI Camera & Mode 3 RFID Hybrid.** The hybrid leaves the dealer free to host, needs no layout change and still captures every side bet; the PJM system re-engineers both the game and the layout and turns the dealer into a compliance operator.

— A.3.2 • Game *speed*

◆ PJM RFID-BASED

Operators evaluating the system report the added process steps reduce game speed by 20–30%, and the lost betting box reduces the number of players per table.

◆ AI CAMERA + MODE 3 HYBRID

Maintains the pace of the game; payout amounts are presented automatically, so the dealer does not slow down to compute them.

VERDICT **AI Camera & Mode 3 RFID Hybrid.** Maintaining hands per hour protects table revenue that the chip-attribution process erodes.

A.4 DATA

Inventory, or a *player-true record*.

WHY IT MATTERS

The value of a smart table is ultimately the data it produces. Both richness — how much and how granular — and fidelity — how trustworthy and defensible — determine whether the operator can rely on ratings, yield tables and pattern detection, or must fall back on estimates.

— A.4.1 • Granularity & player-true *capture*

◆ PJM RFID-BASED

Produces inventory and chain-of-custody data; the player-level layer becomes unreliable once chips disperse among players, so the richest part of the dataset — who played what — is the part most likely to be missing.

◆ AI CAMERA + MODE 3 HYBRID

Captures play at a fine grain and ties it to the actual player: every wager and side bet at every position, back bets, position changes, the buy-in to buy-out relationship, and the exact quantity, denomination and location of each chip.

VERDICT **AI Camera & Mode 3 RFID Hybrid.** The hybrid captures a far richer, player-true record of actual play, down to every side bet.

— A.4.2 · Data fidelity & *evidence*

◆ PJM RFID-BASED

Player-level figures are frequently weighted or estimated rather than recorded as actual, which reduces fidelity and the trust that can be placed in the data, and there is no comparable per-event image record.

◆ AI CAMERA + MODE 3 HYBRID

Because the player is observed directly, ratings reflect actual play, and a retained library of images for every event provides visual evidence for each transaction in disputes and surveillance.

VERDICT **AI Camera & Mode 3 RFID Hybrid.** Higher-fidelity, evidence-backed data is more defensible and more useful for yield and surveillance.

PART B

Intangible comparison — *business impact & roadmap.*

What each architecture means for the business over its lifetime: total cost of ownership, the balance of compliance and customer experience, the leverage of the data, and the strategic roadmap.

SUMMARY MATRIX · INTANGIBLE

SUB-CATEGORY	PJM RFID-BASED	AI CAMERA + MODE 3 HYBRID	WINNER
B.1 · Cost of ownership	Heavy footprint; grows into a de-facto table-management system; high integration overhead.	Lightweight, self-contained; standard SQL; low integration burden.	◆AI Hybrid
B.2 · Compliance & experience	Meets compliance by making the game procedural; loads the dealer and changes the layout; answers customer & bet only indirectly.	Meets compliance transparently above the floor; answers customer & bet directly; no impact on dealing, layout or experience.	◆AI Hybrid
B.3 · Leveraging the data	Compliance-first, inventory-centric; each function must retrofit; player layer too weak for loyalty & marketing.	One clean, player-true stream captured once, serving integrity, loyalty, marketing & analytics.	◆AI Hybrid
B.4 · Strategic roadmap	Baccarat-first; blackjack & Mississippi Stud win/loss only; far from roulette; proprietary chip set costly to reverse.	Baccarat AI pattern transfers to new games (G2E Asia, June 2026); faster iteration; open standard keeps exit cost low; path to ~90–95% coverage.	◆AI Hybrid

B.1 TOTAL COST OF OWNERSHIP

One job done well, or a *second system to run*.

WHY IT MATTERS

The headline licence is only part of the cost. Footprint, integration and the number of systems claiming the same data drive the true lifetime cost and the load on the IT function.

◆ PJM RFID-BASED

Carries a heavy infrastructure footprint and tends to expand beyond a smart table into a de-facto table-management system, so the operator runs two systems that claim the same data, and every integration, reconciliation and patch cycle becomes a multi-vendor negotiation that compounds over time.

◆ AI CAMERA + MODE 3 HYBRID

Behaves the way a mature IT function wants a smart table to behave: a lightweight, self-contained component that does one job well, stores its data in a standard SQL database, and integrates through a small number of clean interfaces.

VERDICT **AI Camera & Mode 3 RFID Hybrid.** A materially lower cost of ownership and integration burden across the life of the platform.

B.2 COMPLIANCE & CUSTOMER EXPERIENCE

Compliance above the floor, or *on it*.

WHY IT MATTERS

Compliance is now the primary reason the technology is deployed, but it must not be bought at the expense of the experience or of operations. The real test is which architecture meets today's and tomorrow's regulation transparently — with the technology invisible at the table — rather than by re-engineering the game, loading the dealer or interrupting the customer.

◆ PJM RFID-BASED

Can meet compliance, but by making the game more procedural: it answers the customer and bet questions only indirectly while loading the dealer and changing the layout. It satisfies the letter of regulation at the cost of the experience and of operations, and each new requirement surfaces as another manual step at the table.

◆ AI CAMERA + MODE 3 HYBRID

Answers the regulator's three questions directly — know the customer, know the bet, know the money — observing the buy-in to buy-out relationship that is the key financial-crime and safer-gambling signal. It does this transparently: the intelligence sits above the floor, so compliance is achieved with no change to dealing procedure, table layout or the customer experience, and new requirements are absorbed in software rather than pushed onto the felt.

VERDICT **AI Camera & Mode 3 RFID Hybrid.** The hybrid meets and adapts to regulation with transparent technology that leaves operations and the player experience intact, where the PJM system trades both for compliance.

B.3 LEVERAGING THE DATA

Capture once, *use many*.

WHY IT MATTERS

Granular play data should be captured once and then serve many purposes — integrity and compliance, loyalty and marketing, analytics and yield. Whether that is possible depends on how clean, granular and trustworthy the single source is.

◆ PJM RFID-BASED

Its compliance-first, inventory-centric shape means each function has to retrofit to whatever the dashboards accept, and because the player-level layer is unreliable, the data cannot dependably feed loyalty and marketing; much of the potential value is never realised.

◆ AI CAMERA + MODE 3 HYBRID

Produces one clean, player-true stream captured once and made available across functions. Integrity and surveillance draw on it for evidence; loyalty and marketing use the same granular record — including the split between side bets and main bets — to understand how each player actually plays; analytics uses it for yield and pattern detection. Because the stream is real-time, a host can act while the player is still in the seat.

VERDICT **AI Camera & Mode 3 RFID Hybrid.** One granular dataset serves integrity, loyalty, marketing and analytics at the same time, where chip-attribution data struggles to reach beyond compliance.

B.4 STRATEGIC ROADMAP

A platform that *iterates*.

WHY IT MATTERS

A smart-table decision is a decade-long bet on which vendor can digitise the whole floor, adapt as regulation and game types evolve, and change course cheaply if the environment shifts. What matters is less which games are live today than how quickly a vendor can extend its platform to the next game, and how locked-in the operator is if it needs to move.

◆ PJM RFID-BASED

Baccarat-first and proprietary. On blackjack and Mississippi Stud it currently captures only turnover and win/loss, lacking payout and collection, and it remains far from a working roulette product, so new games arrive slowly and on the vendor's timetable. The proprietary chip set is expensive to reverse, since changing course means replacing chips, antennas, training and data at once.

◆ AI CAMERA + MODE 3 HYBRID

G2E Asia in June 2026 showcased AI-enabled smart tables for blackjack, roulette and sic bo. The strategic significance is the platform pattern: the camera-assisted AI approach proven at scale on baccarat transfers directly to other games, so each new game is faster to build and validate than the last — on roulette the AI already reads the exact portion of a chip on a line or corner and calculates the payout automatically. Because the chip standard is open and the layers are independently replaceable, switching cost and exit risk stay low.

VERDICT **AI Camera & Mode 3 RFID Hybrid.** The platform that can iterate from one game to the next fastest, while keeping exit cost low, will digitise the floor first.

◆ OVERALL CONCLUSION

One conclusion, *consistent across both planes.*

Across both planes of assessment the result is consistent. The two architectures share a foundation: both track the chip and answer the money question. Beyond that — on attribution method, player tracking, RFID standard, chip hardware, chip and cage security, dealer process and layout, game speed, data granularity and data fidelity — the AI Camera & Mode 3 RFID Hybrid solution is the stronger system. On the intangible sub-categories of cost of ownership, the balance of compliance and customer experience, the leverage of the data, and the strategic roadmap, it is again the clear choice.

RECOMMENDATION

The **AI Camera & Mode 3 RFID Hybrid Table/Cage Solution** is the recommended smart-table platform. It meets the compliance obligations every operator now faces while protecting the experience, the cost base and the strategic optionality that a chip-attribution architecture puts at *risk*.

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