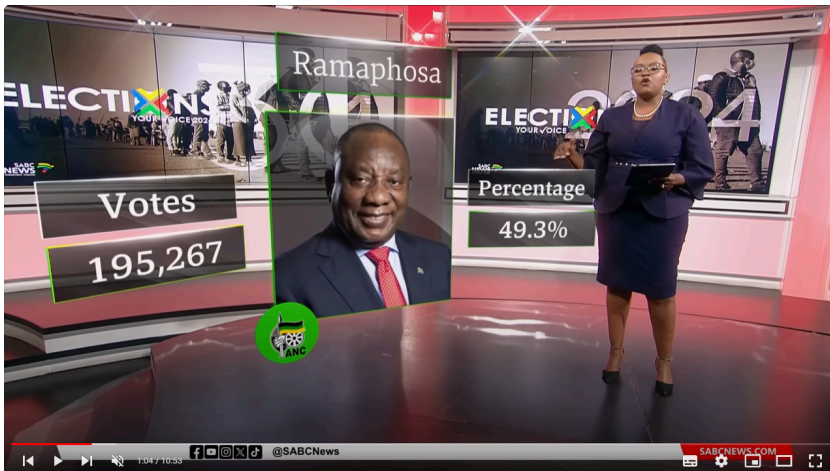


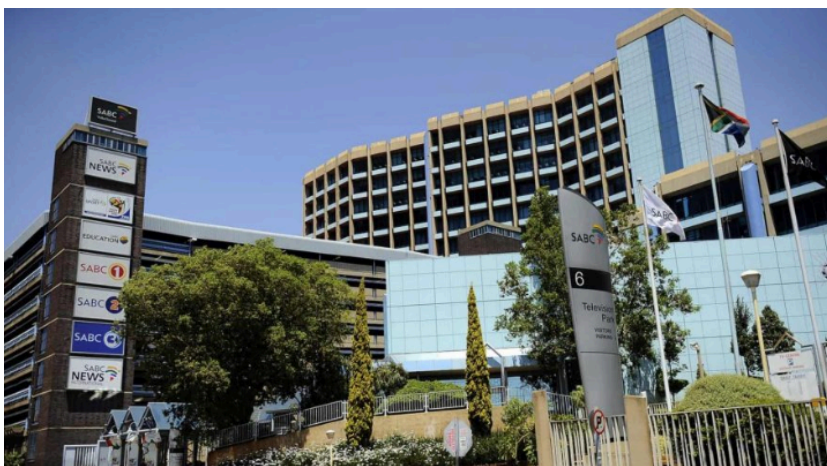
# SABC Broadcast Graphics Case Study: General Election 2024



Broadcast graphics can often be complex, especially when providing general election results. It is a significant responsibility, not only for the national broadcaster but also for the technology partners collaborating on one of the most pivotal events in any country's history.

Electoral systems vary greatly from country to country. Consequently, off-the-shelf graphics solutions must be flexible to meet each election's unique requirements.

More importantly, it was RT Software's expertise and in-depth understanding of different electoral systems that was crucial in helping the SABC realise their vision for South Africa in 2024. This expertise, cultivated over many years, dates back to RT Software's first election project in 1992, when the BBC used virtual studio graphics for the first time to tell the story of the UK election.



**RT Software** is a provider of comprehensive graphics solutions to the broadcast industry, covering news, sports, entertainment and channel branding.

Products cover every possible type of graphics application, including augmented reality, telestration, playout, virtual studios, live overlays, and much more.

Significant investments in AI technology have delivered exciting enhancements to the product range enabling users to achieve better results in less time.

Across the entire range, integration with external systems include: newsrooms (NRCS), playout automation, and camera trackers.

Thanks to the browser based interfaces from the latest generation of Swift, graphics systems can be deployed on-premise or in the cloud.

## Planning Ahead

In May 2024, South Africa held its 30th general election since the landmark events of 1994, when Nelson Mandela was elected president. The national broadcaster, the SABC, was tasked with bringing the election to life for nearly 60 million people, with a particular emphasis on using graphics to tell the story of election night.

Fortunately, the SABC had the foresight to plan ahead. They initiated a plan to upgrade their broadcast graphics systems well in advance of the event. In fact, three years prior to the election, internal reviews at the SABC revealed that the previous graphics systems had reached the end of their useful life and could not always be relied on for day-to-day activities. It became clear that the demands of the general election would not be feasible without a significant system upgrade.

After a thorough evaluation, RT Software was chosen to overhaul the graphics systems across multiple SABC sites. The delivered system included several 3D graphics editing systems, virtual augmented reality graphics for the studios, integration with their ENPS newsroom system, touchscreen graphics for live presenters, the latest news and sports telestration systems, and render engines for the Pebble playout automation system.

Additionally, the new system triggered the start of SABC's transition from SDI to ST2110, marking a significant milestone in their technology renewal program.

Alan Visser, the Project Manager involved in the early evaluation of graphics vendors, understood from the beginning that the answers to his questions would be crucial for the future election broadcast. "I was thinking back then, what will we need in 2024. The constructive initial responses I received were key to building our confidence, because we had to take a long-term view. It turned out to be the right decision because we have just had a very successful election broadcast."

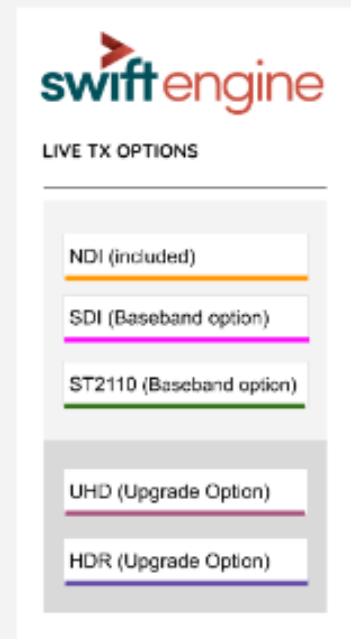
A critical requirement for the new system was a highly flexible render engine capable of handling NDI, SDI, or ST2110 as business requirements changed. Swift Engine was assessed and found to be a scalable and highly flexible solution.

This proved beneficial during the election as systems in different SABC facility locations were using different video formats, even though they shared a common graphics project. High on the priority list was also a user-friendly control surface for live presenters. For the election, RT Software provided touch-responsive graphics and its Tactic Draw telestrator, allowing on-screen presenters to engage with election graphics and explain developments to viewers in real time. The system also served as a key bridge in bringing web content such as social media feeds and YouTube content into the broadcast domain.

RT Software has 2 product ranges, Swift and Tactic, and both impressed SABC with their versatility and reliability.



Swift Engine is the core graphics renderer. Being able to work in any broadcast format was a key consideration for SABC who were migrating from SDI to ST2110, but also required NDI for their 'straight to web' election coverage.



Due to this early planning, by the time of the election, the news team had become much more familiar with their systems and could effectively manage the enormous challenge of non-stop election coverage.

However, it is undeniable that elections place huge demands on any organisation. It has been said that they are 'the news equivalent of the Olympics'. Due to the immense workload, RT Software's Creative Services department was asked to work with the SABC designers to provide additional support and achieve the desired graphic styles.

## The Event

The continuous broadcast was split across different parts of the SABC estate. The main results came into the massive Results Operation Centre (ROC), as shown in the image on the right.

At the ROC, the SABC set up a main studio desk for presenters to discuss events as they happened. Lower third straps and tickers, driven by the ENPS newsroom integration with RT Software's Swift News, kept viewers informed. This integration allowed journalists to use their familiar ENPS client software to select text and images to populate the graphics projects previously created by the design team.



### RESULTS OPERATION CENTRE



The main studio used for the 2024 election broadcast

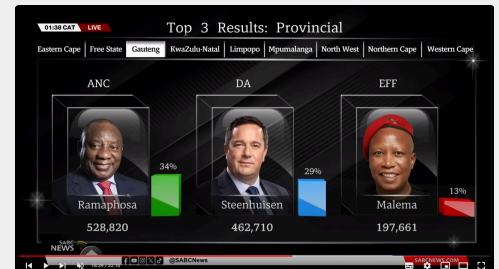
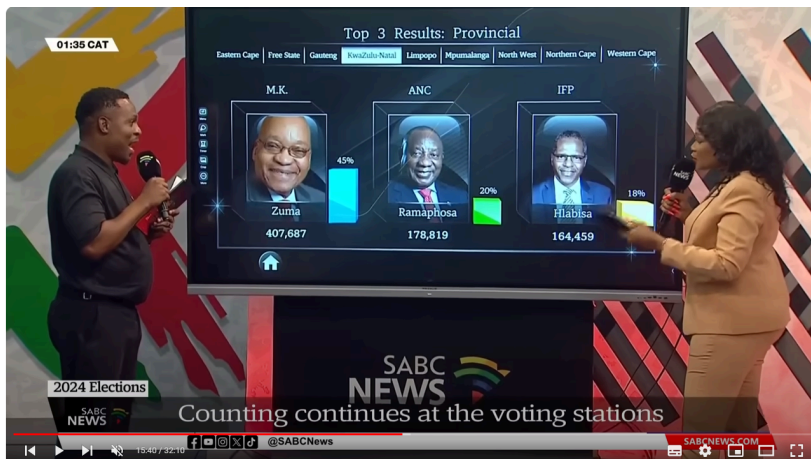
*Left: The ROC's main desk, with on screen graphics such as lower thirds and scrolling tickers. Other on screen graphics included the logo top left with time, location and 'Live'*

To enable this setup, the SABC decided to move not only a presentation desk to the ROC but also the entire daily news programs from 6 am to 11 pm. This involved relocating from their usual location to the ROC, with handovers between the ROC and Auckland Park. Consequently, journalists' desks, along with their ENPS and RT Software's Swift News integration, all had to be migrated without affecting any on air services.



The ROC's main desk featured on screen graphics, including lower thirds and scrolling tickers. Other graphics included the logo at the top left, displaying time, location, and 'Live' status.

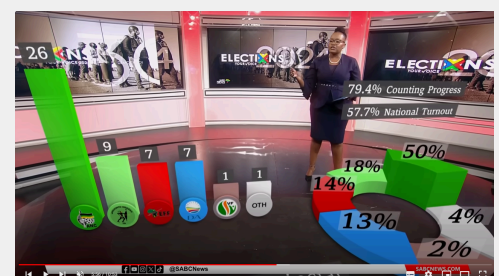
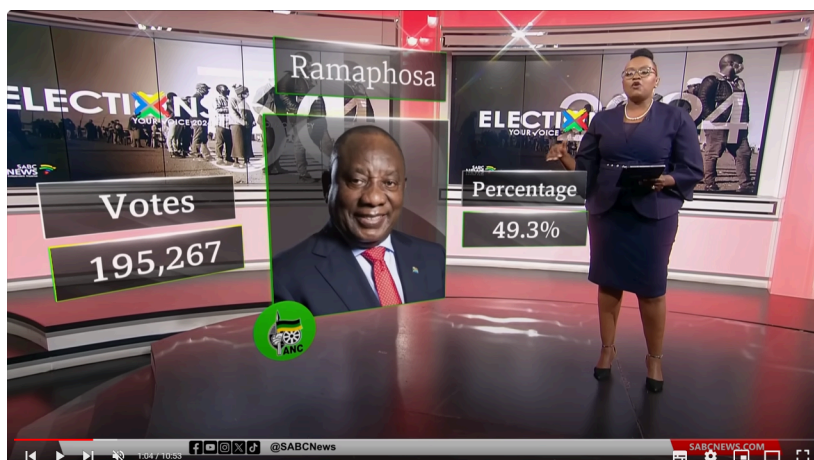
Another feature of the ROC's output was a secondary 'pop-up' channel to handle ad hoc events and post content directly to social media. This was crucial for reaching a demographic more accustomed to consuming news via mobiles and social media than traditional TV screens. RT Software provided a touchscreen system, allowing presenters to interact with the election graphics live with their audience.



Left and above: 'Pop-up' channel with presenter driven touchscreen graphics populated with live election data.

At the Auckland Park site, Studio 11 took on the challenge of presenting the evolving election results using 3D augmented reality graphics. These graphics were real show-stoppers, designed to capture the audience's attention. The technical challenge was ensuring that as the camera panned around the studio, the graphics matched the camera's perspective. This was achieved with an integration between RT Software's Swift Studio and Mo-Sys Star Tracker to keep the 3D graphics aligned with the camera's view of the studio.

### AUCKLAND PARK STUDIOS



Left and above: Main studio shows used augmented reality graphics which the presenter could walk around. This was achieved using integration with SABC's camera tracking system.

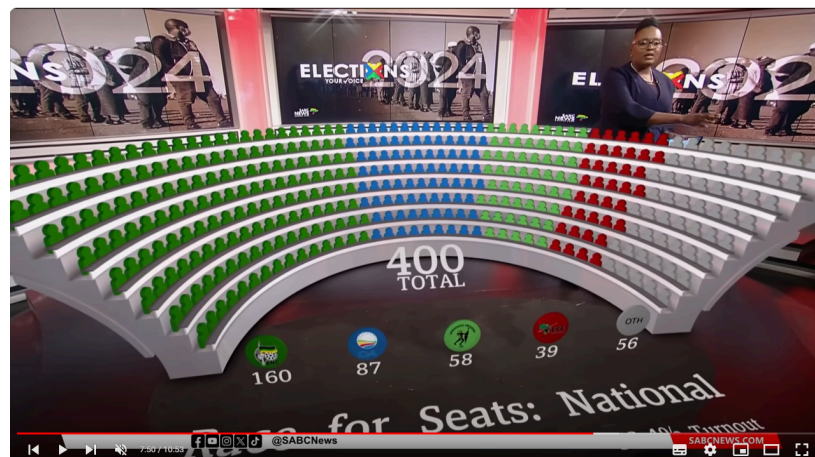


The SABC also managed a substantial outside broadcast operation spread across the nation. As these feeds came back into the main operations centre, scrolling overlays displaying the latest results were added using the Swift graphics system being fed by live election data.



## All About The Data

At its core, all election broadcasts revolve around visualising vast amounts of data. RT Software had to handle three types of incoming data and ensure it could all be rendered by their graphics engines. Live election data came from the Independent Election Commission (IEC), the official body responsible for running the democratic elections. Testing this data in advance was not completely possible, as live data only starts arriving when the election results are announced.



## OUTSIDE BROADCASTS



Above: One of SABC's OB trucks providing live feeds back to the studio..

Left: Live OB, with graphics added at the ROC or Auckland Park..

## About the IEC

The Electoral Commission of South Africa is South Africa's election management body, an independent organisation established under chapter nine of the Constitution. It conducts elections to the National Assembly, provincial legislatures and municipal councils.

Historic data consisted of archived data from previous elections, also provided by the IEC. Using this data had two benefits: it helped to verify that the on-screen graphics would work, and it served as an essential part of the story for viewers. For those watching the unfolding drama of an all-night election broadcast, understanding the swing to or from previous elections is vital. Visualising the current swing compared to historic data was a significant part of the election project.

Finally, predictions came from the CSIR, an organisation providing predictive election models to the SABC. Their model also provided hypothetical data to the RT Software systems so that viewers could understand the different ways events might unfold.

Working with these organisations' data feeds was an important but unseen aspect of the event. The data had to be cleanly and efficiently imported into a graphics database to be selected by graphics projects and rendered on air. RT Software's systems needed to be robust enough to support multiple data sources. It also speaks to the fundamentally flexible architecture of the graphics technology platform.

Exactly how and when electoral predictions can replace historical data in a broadcast vary nation by nation. It very much depends on the different voting systems in place around the world. It is obviously a very sensitive area as it goes to the heart of how democracies are perceived by citizens and it is something that RT Software takes seriously.

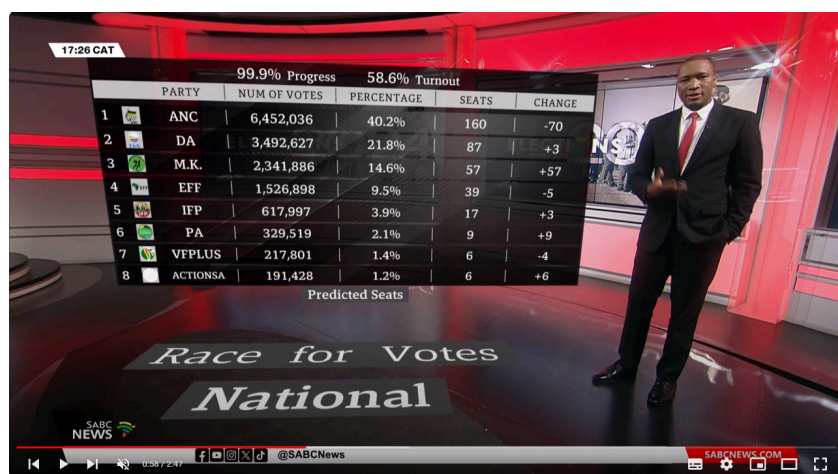
By combining these different sets of data and presenting them to the home audience, the SABC was able to tell a compelling election story. Showing how each party's vote share changed in relation to previous years or other parties was a crucial element of a broadcaster's election night coverage.

### About the CSIR

"The CSIR's election prediction model is not a polling system, but a model that uses statistical and mathematical analysis to predict election outcomes. It showcases how statistical clustering and some mathematical algorithms can achieve good predictions from a small sample of results.

The election prediction model operates on the basis of reducing the bias resulting from the 'non-randomness' of the incoming results that arise from the order in which the results are received."

CSIR Chief Executive Officer, Dr Thulani Dlamini.



## Flexibility is Key

RT Software's renderer, Swift Engine, played a crucial role in the success of the election night. Its flexibility enabled the provision of the full range of video formats. The main facility which provided the regular overlay graphics used ST2110, while SDI was used at the ROC and for Studio 11's augmented reality. Then the pop-up channel at the ROC used NDI and was subsequently distributed on the web and mobile devices. Additionally, Swift Engine was used to stream proxy video previews to operators using their Swift Live browser interface, allowing them to confidently trigger graphics to air at the right time.

Swift Live's adaptability proved invaluable when the SABC decided to relocate their main operations from the usual studio to a temporary outside broadcast area at the ROC. This transition necessitated users across different locations to access and control the same Swift Live graphics session.

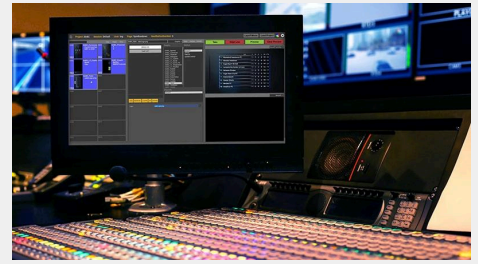
In this context, a 'session' typically refers to a set of graphics tailored for a specific studio location and operated by an associated operator, ensuring graphics rendered and output in the correct video output. However, with SABC's news operation moving to the ROC and requiring coordination between the ROC and Auckland Park, it meant users from different locations, working with different video formats, had to access and control the same session simultaneously.

Fortunately, Swift Live's dynamic capabilities allowed it to seamlessly adapt to this scenario. Operators were able to manipulate the graphics via their local Swift Live interface without interference from others controlling the same session. This flexibility enabled them to concentrate on their tasks using an intuitive control interface, ensuring live graphics were broadcast correctly in the appropriate video format at all times.

## What did the viewers think?

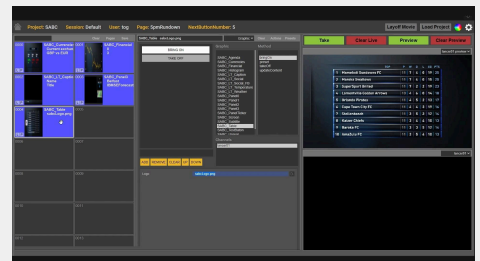
Ultimately, all this enormous amount of effort is all about satisfying the demands of the audience. The measure of success is about how viewers at home react to the way their election is presented.

We think this comment from social media on election night sums up the sentiment from the viewers at home,



*Above: Swift Live deployed in a gallery.*

*Below: One of the many available layouts that can be used to make live operations simple.*

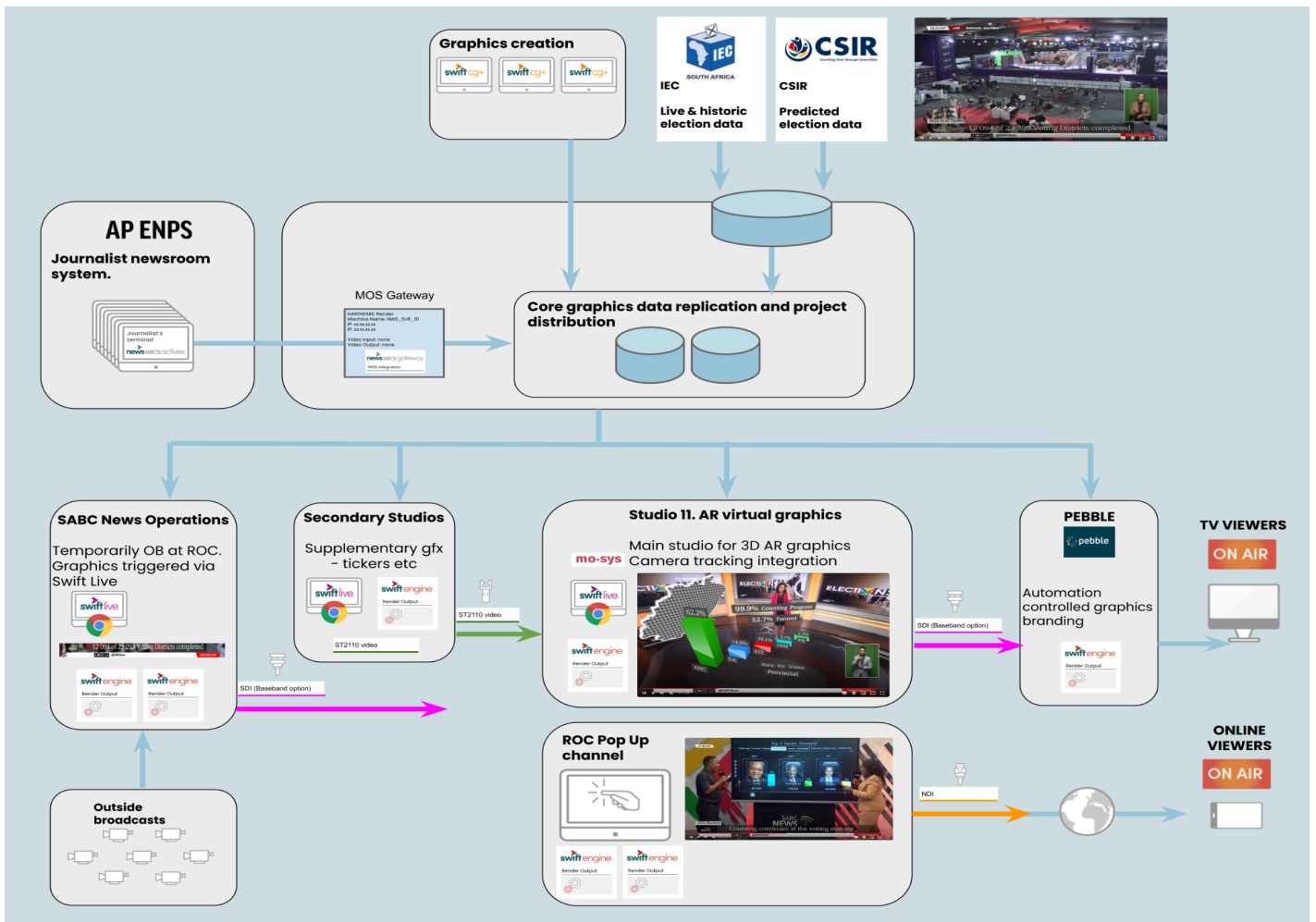


"Those 3D stats are just on another level.  
@SABCNews great coverage!"

SABC viewer on Twitter / X



# System Integration and Workflow



Above: Graphics systems workflow diagram.

As can be seen, a successful project depends on reliable integration with a wide range of technology partners. Integrations must be robust and flexible to accommodate the changing requirements as all major projects inevitably evolve.

## Technology Partner Integrations:

- IEC - live and historic election data
- CSIR - predicted election data
- Pebble - Payout Automation
- AP ENPS - Newsroom NRCS
- Mo-Sys - PTZ Camera tracking

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