# Closing the Loop from Identification to Resolution

*Driving Value from Analytics with SkySpark's Fully Integrated Workflow Application*

**SkyFoundry**

# Introduction

Analytics *Finds What Matters*™, but we create financial value by addressing the issues identified by analytics. That means there is a workflow process – from issue identification, through assignment, resolution, tracking and reporting.

Some customers address this need by utilizing conventional CMMS and work order systems. They find that gets them part of the way – but is often costly and complex.

The processes and requirements involved in taking diverse analytic findings through their lifecycle can be very different than the processes typically included in conventional workorder systems. Customers tell us they need the ability to easily create workflows that fit their specific and unique project needs. To address this need SkySpark includes a comprehensive, flexible workflow process system.

Optimized for the management of issues detected through data analytics SkySpark's workflow features take you beyond conventional asset management and workorder tools. As with virtually everything in SkySpark, these powerful workflow tools are fully customizable enabling you to meet your project-specific needs. And, all of this functionality is included in SkySpark as a standard feature.

In this whitepaper we will take the reader through the concepts underlying SkySpark's workflow system and its key features.

# Managing the Analytic Lifecycle with "arcs"

Think of the analytic lifecycle as a story – *the "arc of the story" takes us from initial issue identification to final resolution.* That's the concept behind SkySpark 's new workflow application.

SkySpark's new workflow features are built on a concept known as "**compound documents**" – *documents that can include text, actions, comments, state transitions, assignments, schedules, links to attachments and more.*

The workflow system starts with three basic types of workflow documents – all of which are extensible by the user.

- **Notes.** A Note provides operators a method to add written documentation to issues detected by analytics, as well as add documentation to equipment system and device records. Notes are simple documents with no associated workflow steps. Notes can have attachments, and support discussion trails among users.

- **Workorders.** Workorders include all of the features of notes but additionally define a specific workflow process. They are designed for maintenance and other physical activities. Workorders include the concept of state transitions to support their status in the lifecycle workflow process.

- **Tickets.** Tickets are tailored to workflows applicable to software support type activities. Like Workorders, Tickets include the concept of state transitions to support their status in the lifecycle process.

Those are the basics – next we will go into greater detail on each of the workflow document types.

**SkySpark Workflow Documents Provide:**

- Full integration with SkySpark's distributed computing architecture - clustering, replication, and SkySpark views

- Customizable workflow management – use our standard library of workflows or easily create your own

- Integrated file attachments – including external file systems Dropbox™ and Google Docs™

- Links to spark views, data, equipment or devices relevant to the Workorder

# The Structure of SkySpark's Workflow Documents
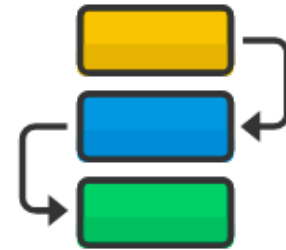
SkySpark's workflow system is based on **compound documents** that can include notes, actions, comments, state transitions, assignments, schedules, labels, links to attachments, and other attributes directly relate to the processes, actions and responsibilities involved in addressing analytic results and taking "sparks" through their lifecycle.

## Notes

A Note provides operators a method to add written documentation to issues detected by analytics, as well as add documentation to equipment system and device records. Notes are simple documents with no associated workflow steps.

- **Display name** – a text field providing a description of the Note
- **Creation time**
- **Created by**
- Formattable text for body of note
- **Replies** with identification of the user providing the reply
- Ability to add attachments including attachments in replies
- **View link** – a link to a view of data, equipment or devices relevant to the Note
- **Attachments** to supporting documents
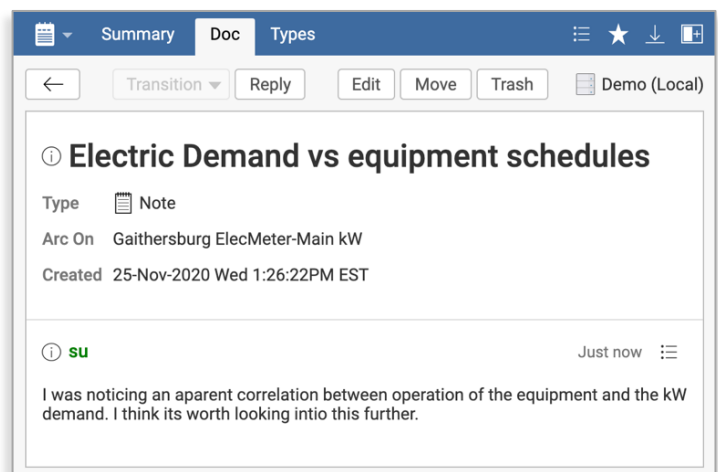
# Workorders

Workorders include all of the features of Notes but additionally define a specific workflow process, including assignments, schedules and other attributes as shown below. They are designed for maintenance and other physical activities. Workorders include the concept of state transitions to support their status in the lifecycle workflow process.

- Display name – a text field providing a description of the Workorder
- Creation time
- Created by
- Formattable text for the body of the Workorder
- Replies with identification of the user providing the reply
- Ability to add attachments including attachments in replies
- View link – a link to a view of data, equipment or devices relevant to the Workorder
- Workorder State; i.e., New, Open, Resolved, Cancelled – note that these can be extended and customized.
- Priority Level with Critical, High, Medium and Low as minimum selections
- Subject of the Workorder (i.e., equipment, device or sensor)
- Assignee – a person
- Due Date
- Labels including the following as a minimum: Breakdown, Damage, Electrical, HVAC, Inspection, Maintenance, Plumbing, Safety, Support, Wish list. The system shall allow for the creation of custom labels beyond the minimum required labels.
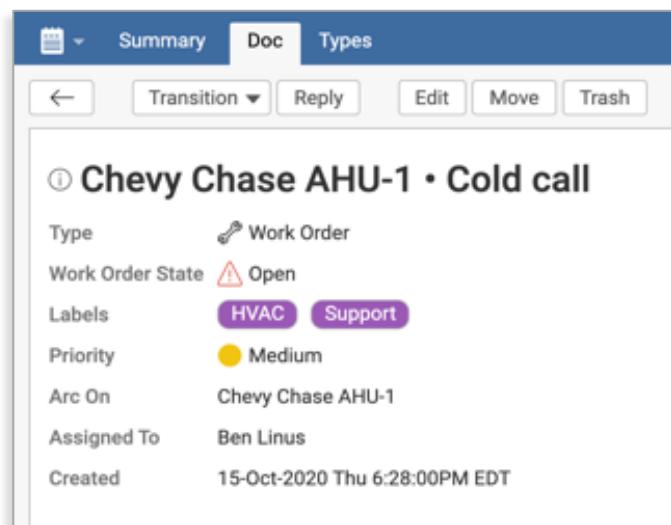
# Tickets

Tickets are tailored to workflows applicable to software support type activities. Like Workorders, Tickets include the concept of state transitions, assignments and schedules to support the lifecycle process. Ticket features include:

- Display name – a text field description of the Ticket
- Creation time
- Created by
- Formattable text for body of Ticket
- Replies with identification of the user providing the reply
- Ability to add attachments including attachments in replies
- View link – a link to a view of data, equipment or devices relevant to the Ticket
- Ticket State; New, Open, Resolved, Cancelled. Allows for the creation of custom states.
- Priority Level with Critical, High, Medium and Low as a minimum
- Subject of the Ticket (i.e., equipment, device or sensor)
- Assignee – a person
- Due Date
- Labels, for example: Bug, Enhancement, Maintenance, Support, Wish list
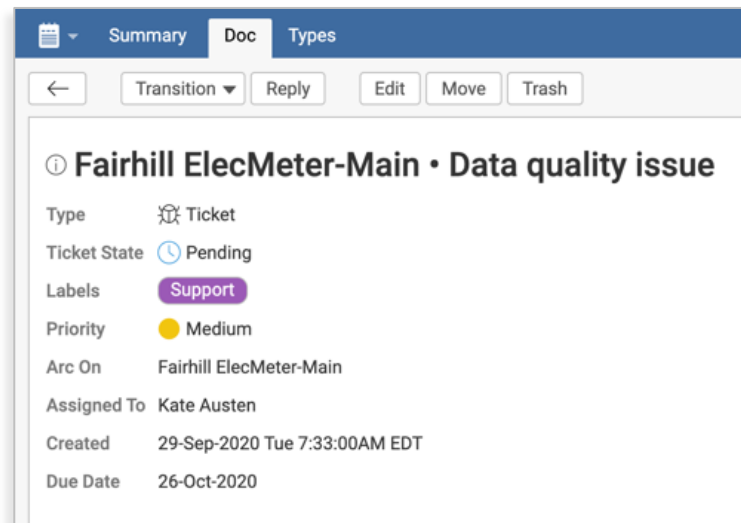
# The Arc App –

## Quick and Easy Creation, Assignment, Viewing, Filtering, Updating, and Lifecycle Management of Arc Workflows

The "Arc" App is where all the power and flexibility of the SkySpark workflow system come together for the user.

The application provides a graphical, point and click user interface for the entire workflow process including the creation of arc documents, assignment to users, management of their status and control of state transitions as well as viewing, filtering, reporting and sharing among users. And all of these features are fully integrated with SkySpark's highly flexible user access privilege system.







Filter arcs on any or all attributes

# Attachments and Integration with Standard File Systems

The Workflow application provides the ability to attach files to Notes, Workorders and Tickets and includes the ability to work with file attachments stored on external file systems including **Dropbox™** and **Google Docs™**.

*This means there is virtually no limit on the size or number of files that can be used as attachments - a key benefit when using the Workflow features with small edge nodes that may have limited onboard storage!*

# Customization of Workflow Documents

This is where the extensibility and flexibility of the SkySpark workflow engine really comes into play. The structure and attributes of Workflow Documents are fully customizable to allow creation of customized Notes, Workorders, Tickets with their own workflow process, state transitions, user permissions, labels and other relevant attributes.

SkySpark provides a default set of standard document types (the Notes, Tickets, & Workorders described in this newsletter) that fit most applications without requiring **any additional effort**, but you always have the ability to extend and enhance your workflows to meet the exact needs of your application.

*SkySpark's Arc workflow system provides users with a fully integrated solution to managing analytic results – from identification to resolution.*

## ABOUT SKYFOUNDRY

SkyFoundry's mission is to provide software solutions for the age of "the Internet of things". Areas of focus include:

- Building automation and facility management
- Energy management, utility data analytics
- Remote device and equipment monitoring
- Asset management

SkyFoundry products help customers derive value from their investments in smart systems. Contact us to learn more.

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