Our Mission

“Provide the research community technology to improve efficiency and accelerate innovation”
ARM Software is trusted by over 10,000 researchers and scientists worldwide in over 100 countries.
Use ARM for all stages of an experiment.

To **plan** and **create** protocols, to **randomize** and **manage** trials, to **analyze** data and **report** the results.
ARM software provides a defined structure to enter information consistently, with master list dictionaries to standardize vocabulary, and has tools for every step of an experiment.
The Last Year in Review
ARM the Industry Standard

The top 12 Agro-Chemical companies now depend on ARM Software worldwide.
Field License Bundle

This bundle brings ARM to the field to help improve efficiency and accuracy.
Leaf Wall Area

Software solution for an industry specific challenge. ARM facilitates the research techniques for future regulation of product applications.
Weather Data Import

Collaboration with ClearAg (Iteris) to build a new feature that allows you to import weather data.

ClearAg offers specific information by utilizing meteorology, agronomy, land surface modeling and crop production at specific GPS coordinates.
Marketing & Support

We hired a full-time sales and marketing associate to focus on our client communications.
The Year Ahead
Training Initiatives

Continue to expand our tools and resources to make it easier for our clients.

- Tutorials
- Coaching Events
- Webinars
Product Release

Work as a team to ensure every client is aware of the new features and how to use them to make their work more efficient.
Precision Ag

Work closely with South Dakota State University to provide support with development and implementation.

• Correlation of known variability
• UAV data analysis
Client Driven Development

Working closely with our clients to implement additional features and intuitive reporting.

Providing new features throughout the year.
ARM improves efficiency, increases accuracy, and promotes better quality of results.
ARM 2019 Enhancements
Repeated Measures
Repeated Measures

Analyze repeated assessments across time

Enhancement

• Powerful statistical analysis which enable the control of factors which cause variability between treatments over time.

• Provides analysis of treatment means over time to determine if there is an overall time effect on the treatments performance.
Repeated Measures

Define assessments for analysis:
1. Select a column to find potential repeated assessments.
2. ARM proposes fields to match other columns.
3. Diagnose issues with column selection.
4. Or load from history of column matches.
Repeated Measures

Means and comparison letters for:

- Treatments
- Rating Dates
- Treatment x Rating Date interaction

Apply correction to adjust for correlation (H-F-L or G-G)

Repeated Measures AOV table
Repeated Measures

Treatment x Time Graph

- Plot treatment means over time.
- Visually identify treatment interaction across assessment dates.
Study Review
Mark a trial as Reviewed

• Track whether a trial has been reviewed
• Identifies who marked as reviewed
• Trial Settings > General tab

• 'Trial Reviewed' action is automatically logged in Notes tab of Site Description
• Checkbox is cleared when any change is made to data in the trial
Create a review group

• 'Review' study rule defines who is allowed to mark a trial as reviewed

• **Condition** field defines who to include in the group:
  • just protocol or trial owner(s)
  • everyone in my company
  • Anyone (i.e. no group)

• Example: Sponsor wants to ensure the study is reviewed internally. Contractor can still create their own separate review group to review before sending back to the sponsor by adding another 'Review' rule for their company.
Study Rules
Study Rules

Merge Study Information
• Easily copy information from study to study.
• Replaces “Save As” function.

Enhancement
• Choose to not merge study rules if the study is originated by your company.
• Offers new flexibility for internal researchers.

Feature in action
Merge Study Rules

Enhancement

- Limit study rules merged to only selected protocol/site description sections.
Always Validate Studies
  • Validation ensures all protocol criteria has been met.

Enhancement
  • Validation messages now list the study rule number that triggered the error or warning message.

Feature in action
Rule Set Name Identification

- Identifies/Verifies the correct rule set used within the study.

Enhancement

- The name of the loaded rule set now displays in the editor heading when a rule is selected within the table.

Feature in action

![Table with rule set information](image)
Tools
Existing blank treatments are automatically removed when performing a merge with another study.

<- Before and After ->
Tools: Import Weather

Progress bar added during Weather import

- The weather is imported from outside the ARM software.
- This ensures you know that progress is being made 😊.
Study Settings
Why is a specific time zone needed?

- Ensure the alignment of the trial location in relation to time zone to external data providers.
  - New Weather API will align location specific weather for a particular time, such as per application.
- Trial Settings > General tab
Clarified 'buffer' option text

- Changed to 'Alley width' - a more commonly used term
- Previously called 'Buffer' between blocks or plots
- Protocol/Trial Settings > Layout tab
New Options - Liters

Liters as an Overage Option

- Clients may have equipment that requires a very large amount of overage. Instead of using ML's (1000's), you now have the option of Liters. Example: 2150ML vs, 2.15L.
- Can be entered in the Settings > Application tab or, Appl. Equipment > Mix Overage, Unit or, Application Plan.
Mix Size Units

Enhancement

• Brings consistency to the unit names whether you are in the treatments editor, settings, or application plan.

• Settings > Application tab

• Appl. Equipment > Mix Overage, Unit or, Application Plan
Site Description
Track Trial Progress*

Why document trial progress?

• Requested by sponsors.
• Provides visibility and credibility to timely data entry.
• Added new fields to track status and progress throughout the season.

*Coming in ARM 2019.1
Track Trial Progress*

Additional new fields to track status and progress throughout the season.

- Application tab > **Appl. Entry Date**
- Assessment Header > **Data Entry Date**

*Coming in ARM 2019.1
Protocol Instructions

Support Rich-Text Formatting

• Preserves the format from the original protocol through to the Trial.

For assessments follow the Data header information in detail.
Collapsible Repeating Sections

Fixed:
- Repeating section panels now resize after displaying hidden fields.
**Trial Origin***

Why track the trial origin?

- Helps answer budget questions.
- Valuable to the R&D division.
- ID’s in-house, contracted or by a public institution trials.

*Coming in ARM 2019.1

Header editor > Trial Origin or,
Trial Establishment Guidelines > Trial location Table
Auto-Fill default settings for application planning fields.

- Intuitive way of using Settings set to default and fill out the plan.

Enhancement

- Auto-fills with default entries when clicking in a blank field for mix size, mix overage and spray volumes.
Assessment Data
Show more than one type of entry when matching on a field.

How does it work?
Select multiple items for the “Match” column Filter.
AUDPC Transformation

Enhancement during AUDPC

• Allows selecting multiple values for match fields.
• Lists columns currently matched.
• View only selected/matched columns on the assessment data editor.

Where is this feature?

• Tools > Transform, select AUDPC
Include Column ID in assessment image file name

- Helpful when attaching images for multiple assessments taken on the same day

Where is this feature?
- Assessment data editor > Properties Panel > Attach
Tablet Data Collector (TDCx)
Display the current position in real-time

- Researchers now can determine the accuracy of the GPS device while documenting coordinates.
- TDCx will display: GPS coordinates, accuracy and altitude.

Where is this feature?
Choose “Tablet Read GPS Editor”
Increased size of Pin button

• Previously was hard to click on the small Pin button to unlock a Properties panel when using a stylus (or finger) on a tablet
ARM Migration
Migrate Settings*

Copy settings when moving to a new PC

• Copy personal lists, report sets, ARM settings to new computer

What's new?
Prompt to create package before deactivating the old PC.
Spray Seeding Plan

Why minimum mix size calculator?

- This helps determine the minimum mix needed.
- Proactively plan for your trial with this calculation.

Enhancement

- ARM reports the bare minimum mix size needed to cover the area of all 4 reps.
SE Definitions*

Plan and define standard evaluations (SEs) and tasks to use in the study

- Simpler than importing SEs from file into assessment data editor

Use Tools > 'Build Header, Tasks' to create the SEs and tasks defined in this tab

Multiple rating timings create columns for each timing code

- Two-column SE F097_C2 times 3 rating timings A1-A3 = 6 total data columns

*Coming in ARM 2019.1
SE Definitions*

1. Display SE Name list
2. Select an SE, can search/filter descriptions
3. Preview assessment columns defined in SE

Can also define tasks on this tab to add to Schedule editor

*Coming in ARM 2019.1