

GALAXY GAZETTE

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SYSTEMS
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Here's your place to find out what's
happening all across the ASI team,
from new innovations to important
events and announcements.

ASI LEVERAGING DATA ANALYTICS IN SUPPORT OF COMFRC MATERIAL FORECAST IMPROVEMENTS

By Steve Mclean

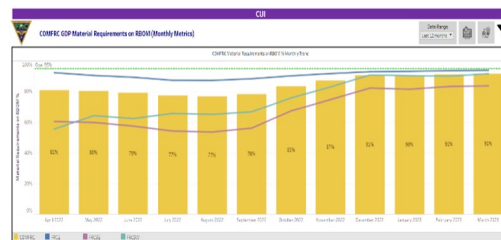
Commander Fleet Readiness Centers (COMFRC) utilize the Gross Demand Plan (GDP) forecast to provide material forecasts to Defense Logistics Agency (DLA) Planning in support of Maintenance, Repair, and Overhaul (MRO) actions at each Fleet Readiness Center (FRC). The GDP forecast is based upon the 24-month FRC Forecast Work Order (FWO) with the respective Bill of Material (BOM), Quantities per Assembly (QPA), and Replacement Factors (RF). Diligent authentication, up-keep, and communication of these planning parameters enable Defense Logistics Agency (DLA) Planning to approve and publish accurate and reliable customer forecasted requirements.

ASI developed the GDP Metrics and associated Tableau dashboards in collaboration with subject matter experts from the FRCs and DLA. The GDP Metrics are designed to assist the MRO Logistics group to support the FRCs with:

- Improving BOM accuracy to meet standard levels of performance and goals.
- Improving accuracy and execution of the GDP material forecasting process partnered with DLA, driving material availability at the shop floor.
- Providing a weekly tool for the FRCs to conduct core data maintenance required to achieve high levels of GDP accuracy.

ASI completed development of the GDP Metrics Tableau dashboards in August 2022. Since that time, the FRCs have utilized the metrics on a weekly basis to identify and correct BOM records, resulting in a 14% increase in BOM accuracy from 77% to 91%. In April 2023, ASI hosted the COMFRC GDP Metric summit in Havelock, NC, including representatives and stakeholders from COMFRC and the FRCs. The summit provided a synergetic and collaborative environment with topics including an overview of the current version of GDP metrics, performance management, best practices, and initial development of the GDP Metrics version 2.

ASI continues leveraging data analytics to support COMFRC initiatives. We are currently developing version 2 of the GDP Metric's as well as developing the Fishbone and Work Order Effectiveness metrics to provide root cause analysis for material delays at the FRCs. These metrics are now integral components of COMFRC's efforts to improve forecast accuracy and material readiness in support of production efforts and On-Time Delivery.



For more information, please email us at:
info@androsysinc.com



ADVISOR: HIGH-VALUE ASSET TRACKING TECHNOLOGY

Geolocation technologies have come a long way in recent years, and now, ASI is combining RFID and drones to create a new frontier for location-based asset tracking. RFID tracking methods for inventory and equipment are commonplace. However, drones have revolutionized the way we view the world from above. Together, they offer a powerful tool for the geolocation of high-value assets. Drones are Unmanned Aerial Vehicles (UAVs) with various sensors, cameras, and GPS technology.

Businesses currently use drones for multiple applications, from aerial photography and videography to surveying and mapping. RFID technology uses radio waves to communicate between a tag and an RFID reader. The tag contains a tiny microchip and antenna that can be attached to an asset. The RFID reader scans and picks up the signal from the tag to track an asset's precise geolocation and asset data associated with the tag. In the last ten years, warehousing and logistics companies have used RFID technology for inventory and asset tracking. A drone mounted with an RFID reader can fly over large areas and quickly capture data from the RFID reader and drone sensors, instantly sending the data to a software application displaying the geolocation and associated asset data.

ASI's created an innovative capability combining the drone and RFID capabilities, a powerful tool for asset tracking via geolocation. The ADVISOR product line consists of Drones or alternate mobile vehicles mounted with RFID readers to surveil large equipment storage areas where the reader picks up RFID signals from the tags attached to assets. The readers pinpoint the location of each tagged asset and transmit the data to a computer system for analysis and display of asset data. The ADVISOR technology has a range of potential applications, from tracking the location of equipment and inventory to monitoring the movement of assets in outdoor environments. One key advantage of using drones and RFID for geolocation is that it is possible to cover a large area quickly, reducing the time and cost associated with traditional asset tracking methods. Additionally, using RFID and drones for geolocation, the readers pick up signals with high precision and provide precise asset location data.

ASI's ADVISOR Drone RFID asset tracking methods enhance customers' ability to make better-informed decisions about optimizing their operations for maximum efficiency and improve security by mitigating lost or stolen assets. Overall, combining RFID and drones for geolocation is an exciting development in asset tracking. As this technology continues to evolve, we expect to see even more innovative solutions to help businesses optimize their operations and improve their bottom line.

FRCSE Industrial Plant Equipment Reliability Improvement Using Predictive Maintenance Technologies ▴

At FRCSE, Industrial Plant Equipment (IPE) reliability is an important element that allows the facility to perform its mission. IPE is the equipment the plant uses to manufacture, repair, overhaul, and test any aspect of the aircraft or its components that they service. Condition Based Maintenance (CBM) was introduced to the FRC communities around the FY 2000 timeframe. NAVAIR provided the training, equipment, and mentoring to make the program a success.

One pillar of CBM is Predictive Maintenance. This element of CBM utilizes technologies such as vibration and oil analysis, working in unison with a Preventive Maintenance program, to improve equipment reliability and provide a stable production environment at a lower cost. When these technologies are inserted into the maintenance process, it lowers the overall cost of maintenance by utilizing equipment conditions rather than time to perform this maintenance.

For example, the OEM PM schedule is to drain and change the hydraulic oil and filter semi-annually. This form of maintenance doesn't consider several factors such as the environment the equipment works in, overall usage, and condition of the oil and filter. By insertion and utilization of oil analysis technology at the same interval, you can have a scientific view of the condition of the oil, trend the condition, and change it, or just change the filter based on their condition. This analysis gives you the oil package (makeup) condition, water content, particle counts for contamination, and elemental counts which are used to determine internal damage to components such as bearings that cannot be seen.

Mini Lab Components



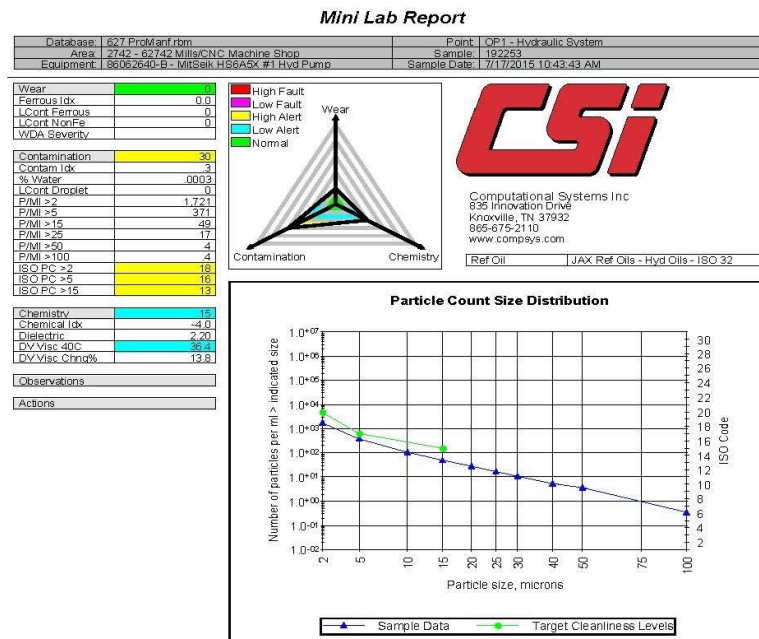
In short, if the oil analysis is good, the oil and filter are not changed based on science. Thus, reducing the cost of the oil, filter, and disposal of the oil. This technology is used on all systems which have a reservoir of over 10 gallons.

Pictured is a photo of the oil analysis equipment that is being used by Shop Code 63322.

Vibration analysis is another tool that is used to reduce costs and improve reliability. Instead of disassembly and examination of components and systems because the OEM recommends it, vibration analysis is implemented. The data is collected from the machinery while operating by utilizing an analyzer and vibration accelerometers. Once collected, the data is downloaded into the Emerson RBMware vibration analysis software.

After it is downloaded, the vibration data, waveforms, and spectrums are analyzed for any anomalies such as bearing faults, misalignment of components, imbalance, etc. The information provided by this analysis gives a real-time look at machinery health.

RBMWARE OIL VIEW ANALYSIS REPORT



CSI 2140 Data Analyzer



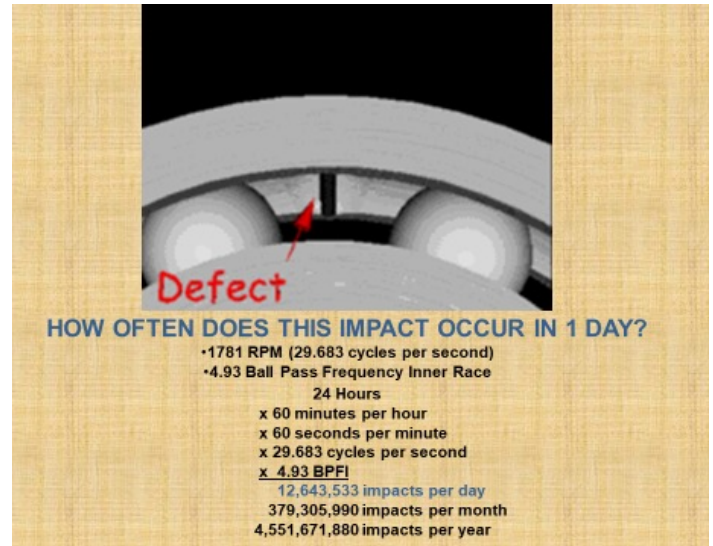
Tri-axial Accelometer



Predictive Maintenance

To explain further, bearings are used in most equipment that has rotating components (Motors, pumps, gearboxes, drive trains, etc.). Each size of bearing has unique frequencies associated with its physical makeup. These would be the inner and outer race ball pass, fundamental train, and ball spin frequencies. When new, these frequencies would be very low in amplitude. If these frequencies are detected in the spectrum during analysis as spikes of energy, it generally indicates some form of damage has occurred to the bearing. Over time, these spikes are monitored and trended.

Pictured here is an example of a bearing defect. Once the frequencies reach a specific preset alarm,



reports and work orders are generated to repair the equipment. This predictive process provides a solution that is beneficial to the equipment owners and the FRCSE because the work is planned and machinery is repaired at a lower cost with very little impact on production schedules.

Pictured is an example of a Vibration Problem Report generated through the software.

VIBRATION PROBLEM REPORT

RBMview® Problem Detail (A)
Criteria: Status=Open 11/09/11 John Gauthier/14198

Area: 2334 62334 Heat Treating/Foundry
Equipment: 96066512 Wisconsin 2A
Urgency: **Serious**

Title: 08-Nov-11 - Fan rotor resonance - Air Handler (Fan), Centrifugal - Outboard
Fault: Fan rotor resonance

Survey: 08-Nov-11
Closed: ☐
Status: Open
Certainty: 5
Assign: John Gauthier/14198
Text: RBMview

Explanation: There is a high radial vibration which has caused a set of bearings to fail. The bearings were changed and testing was begun to determine the cause of the vibration. The rated fan speed as stated on the data plate is 1738 rpm. The motor speed is 1778. We checked these speeds with a strobe light and found the motor speed was correct but the fan speed was running at 1804 rpm. The difference in speeds caused the RBM team to investigate further. We suspected resonance at motor running speed. We performed a bump test on the fan shaft and fan which will verify our theory. The test was conclusive for resonance. The fan had a resonant frequency of 1700 CPM. This frequency is located close to motor running speed. The factory apparently discovered this and increased the fan to increase the speed out of the range. The increase was inadequate. The general rule of thumb is to move the speed away from the resonance by at least 20% which in this case would be 240 rpm greater or less than 1700. We will have the fan speed down by changing the motor slow to achieve the 20% difference. The should correct the resonance problem. We will then balance the fan to further reduce the vibration to acceptable levels.

Observations:

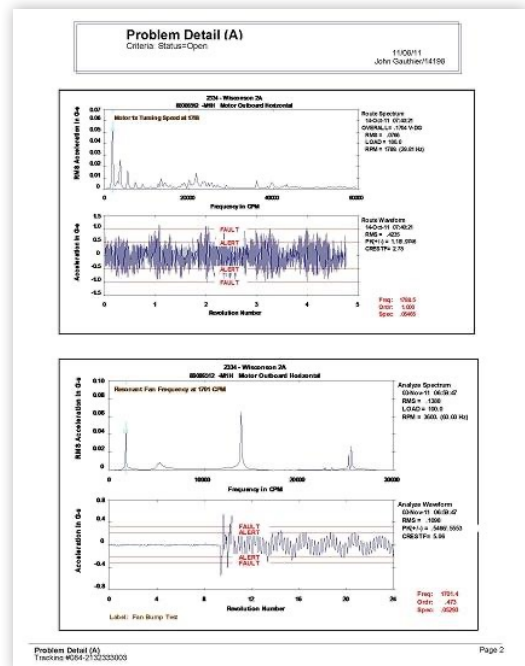
Date/Time	Operator	Notes
08-Nov-11	John Gauthier/14198	Multiple harmonics of TS
08-Nov-11	John Gauthier/14198	High 1xTS axial

Actions:

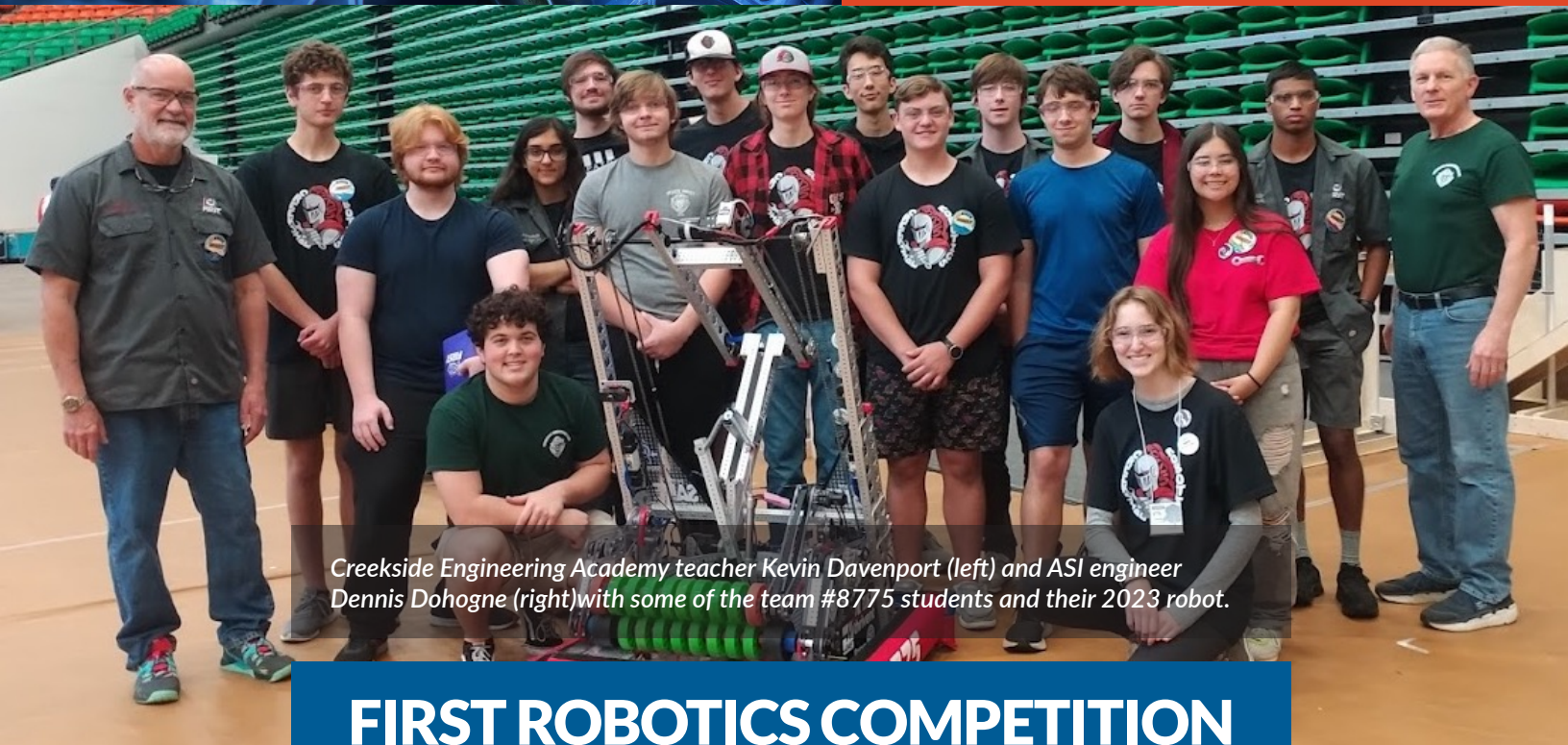
Date/Time	Operator	Notes
08-Nov-11	Robert As	Adjust resonance near fan speed
08-Nov-11	Robert As	Speed As
08-Nov-11	Robert As	Speed As
08-Nov-11	Robert As	Speed As

Problem Detail (A)
Technician #004-2132303003 Page 1

SPECTRUM AND WAVEFORM



Like a lot of existing programs in the past three years, the ability to sustain them was slowed because of COVID-19 and the loss of personnel and expertise through attrition. ASI is now providing mentoring support to FRCSE personnel for the purpose of reenergizing these necessary technologies. Working with engineering technician Ryan Worthington, the oil analysis program is in full swing and the vibration program is now getting a jump start to bring it back to full production



Creekside Engineering Academy teacher Kevin Davenport (left) and ASI engineer Dennis Dohogne (right) with some of the team #8775 students and their 2023 robot.

FIRST ROBOTICS COMPETITION *Success Without A Trophy*

By Dennis Dohogne

Andromeda Systems Incorporated (ASI) has been a proud member of the National Defense Industrial Association (NDIA) for many years. As the current President of the NDIA First Coast Chapter, ASI Chief Administrative Officer Jennifer Otero organized the Chapter's first Science, Technology, Engineering, and Math (STEM) and Vocational exchange, the SOAR STEM and Vocational Symposium. Local industrial and government leaders in science and technology were brought together with local students and teachers interested in STEM-based education and careers. It was through this exchange that ASI administrative and engineering staff members formed a relationship with Creekside High School Engineering Academy.

"Our connection to local youth and the education system is critical to providing them with keen insight into the many career pathways that the STEM and vocational fields offer," said Jennifer Otero, "Through this, we hope to retain the next generation of extremely talented youth local to this area by exposing them to the companies of the First Coast region."

For Inspiration and Recognition of Science and Technology (FIRST) is a robotics community that prepares young people for the future through a suite of inclusive, team-based robotics programs for ages 4-18. ASI engineer, Dennis Dohogne, has been a mechanical engineering mentor for robotics team #8775 at Creekside High School in St. Johns, FL since its inception last year in 2022. The extracurricular team is led by Kevin Davenport who teaches the Engineering Academy at Creekside.

The contests are different every year. The new game is announced in the first week of January and competitions start all over the world a mere 60 days later. This is not battle bots, but a wonderfully organized, collaborative challenge.



Each robotics team is partnered with two other teams to form an alliance and is pitted against another three-team alliance. The teams change their bumper colors to correspond to their assigned alliance color, red or blue.

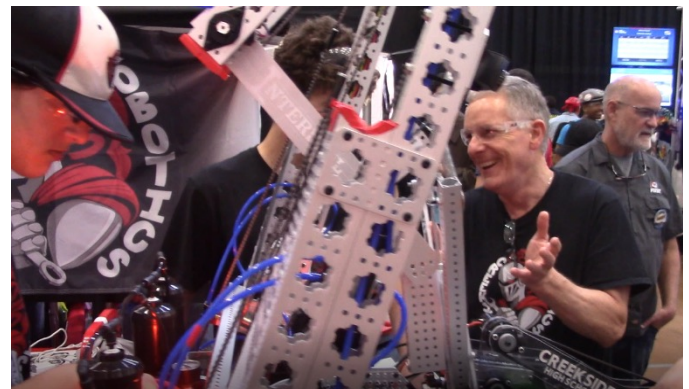
A team will be matched with different teams and color alliances throughout the weekend. The result is an accurate ranking of the robots at the end of the 76 matches, with the top-seeded teams advancing to the finals. Last year, the Creekside team was the highest-seeded rookie at the Orlando, FL Regional competition.

The robots can weigh close to 150 lbs. and the contests are daunting! They start with a 15-second autonomous period where the robots score solely on what they have been pre-programmed to do. Then, the student drivers step up to their controllers and take over for the next 2+ minutes. Scoring usually involves collecting and depositing various game pieces in increasingly difficult arrangements but also involves getting the robot off the floor as part of the endgame. This year, that meant driving onto a tilting platform and balancing – made even more difficult since there was always another robot trying to also achieve that balance. Last year, it involved having the robot climb a set of monkey bars that got progressively higher, and yes, we did it!

The students strategize how they are going to play the game, handle the game pieces and endgame, then design, build, and program the robot. The students do mechanical design in SolidWorks 3D CAD and program in Java, Python, or other high-level languages. They employ motors, cameras, sensors, gyroscopes, pneumatics, gears, belts, chains, 3D printing, zip ties, and anything else to get the job done. Despite the many after-school and weekend hours spent, it seems there is never enough time to prototype and refine the designs and programs, but they go for it anyway.

The Creekside team did not bring home a trophy this year but was nonetheless successful.

There was not a single mechanical failure or repair needed, but incorrect settings for a current limiter and program macros without an override proved to be our downfall. The success was how the students worked together and reacted to the problems - how they grew from this experience. The teamwork and communication were great. On their own the students formed into groups for scouting, modifying their strategies, organizing, problem-solving, and accumulating lessons learned. They came away from the competition energized and enthused and are already working on how to do things better for next year.



Dennis “advising” one of the students with an engineering joke.

Who needs a trophy?

2023 SOAR STEM and Trade Careers Symposium



The NDIA Team (from left): Eleni Cruise (ASI), Jennifer Otero (ASI), Jason Hayes (Northrop Grumman), Elizabeth May (Prosser), Carrie Young (Tek Systems), Greg Hutson (ASI), Joe Rodriguez (ASI)

The NDIA First Coast Chapter held its 2nd annual SOAR STEM and Trade Careers Symposium on February 7, 2023, at FSCJ Kent Campus in Jacksonville, FL. It's an annual event that brings together students, educators, and industry professionals to explore STEM and trade careers.

This event provided a unique opportunity to explore a wide variety of career paths and hear from experts in the industry. The symposium included interactive workshops, panel discussions, and keynote speakers. Attendees had the opportunity to network with industry professionals and learn about cutting-edge career opportunities.

Future of Stem

This year one of our own engineers, Colleen Brew, was a panelist discussing her path to becoming an engineer. We even had several children of the ASI Team join us to learn about potential careers for their future. Five scholarships were presented to senior high schoolers from across the First Coast region.

The symposium was a great success and provided invaluable insights for students, educators, and industry professionals about STEM and trade careers. This symposium is a great way to engage students in STEM and trade careers, help them gain a better understanding of the industry, and connect to local companies.

We are proud to support this event each year, and we look forward to continuing to provide students, educators, and industry professionals with the opportunity to explore STEM and trade careers. The next symposium is scheduled for February 6, 2024, at the FSCJ, Downtown Campus, Advanced Technology Center.

More info on the next event to follow.



Derreck Martell representing ASI and Kian Martell volunteering at the NDIA event.



Fleming Island High School Society of Physics Club attendees and scholarship awardees

Do You Know About NDIA?



Friendly Reminder: As an employee of ASI you have access to a National Defense Industrial Association (NDIA) membership. NDIA is the trusted leader among Defense and National Security Associations. Perks include:

- Subscription for National Defense Magazine
- Networking via local NDIA Chapters
- Division Participation
- Weekly Policy Digest eNewsletter
- Member discounts to over 150 events annually

To begin taking advantage of this valuable resource go to www.ndia.org/login, click on “Create an Account” and follow the prompts. When you enter Andromeda as your organization, you will be automatically added to the roster.

If you have any questions regarding how to engage, or if you need assistance, contact NDIA membership@ndia.org.

For more information about NDIA offerings, visit their website www.ndia.org.



Travel Tips for Employees



Thanks to all for the support and patience during our transition to the new timecard system!

Tips from Accounting:

- Prior to going on travel, always confirm you have the charge code for the contract you are supporting in Concur. This expedites travel claim submission and processing.
- If you need a charge code added to Concur or your timesheet, please see your supervisor for submittal to Accounting.

This quarter, we are introducing a new series called The More You Know. The purpose of this series is to provide our staff with knowledge on topics such as diversity, inclusion, health, and well-being. Our hope is that these entries are not only informative but also offer insight into different perspectives and ways of life.



“Inclusion is not bringing people into what already exists. It is making a new space, a better space for everyone.”
– George Dei

To kick off this series, we are recognizing Autism Awareness Month in April. First held in 1972, the intention of this month-long celebration is to promote acceptance, celebrate differences, and be more inclusive to individuals with autism. According to the CDC, approximately 2.21% of the adult population in the United States has been diagnosed with being on the Autism Spectrum. In addition, about one in four children has been identified with Autism Spectrum Disorder (ASD).

Promoting inclusivity not only has a positive impact on people with different abilities, but it can enrich the lives of everyone by providing new perspectives and encouraging empathy to those around us – no matter the circumstance. Some ways that you can get involved to celebrate Autism Acceptance Month and beyond include:

- Research local autism awareness organizations in your area to participate in events such as fundraisers and Awareness Walks.
- Educate younger generations through reading books that emphasize kindness and acceptance towards the autistic community.
- Donate to Autism Awareness organizations such as Autism Society or Autism Speaks.



HAPPY ANNIVERSARY

5 YEAR

*Wes Bush
McKinley Freeman
Lisa Hampton
Ray R. Huertas
Guy J. Michaud
Erin Ownby
Alysia Rodgers*



P R O M O T I O N S

*Jenna Bemis
Eric Biesen
Rob Grooms
Chad Hughey
Steve McLean
Bryan Miller
Derek Simmer
Josh Watkins
Alex Wilson*

*Accounts Receivable
Senior Stress Engineer
Logistics Manager
Senior Logistics Analyst
Logistics Manager
Accountant
Senior Electrical Engineer
Systems Engineer
Help Desk Manager*



NEW HIRES

NAME	TITLE	DIVISION
Stephen J. Adamczyk	Subject Matter Expert	A&PM
Scott Atwood	Senior Logistics Analyst	A&PM
Nelson Avillanoza	Logistics Analyst	A&PM
Britney Baker	Accounts Receivable	Finance & Accounting
Cameron Bell-Frakes	Proposal Analyst	Contracts
Cynthia Betts	Logistics Analyst	A&PM
Colleen A. Brew	Jr. Structures Engineer	Engineering
Dennis Dohogne	Senior Design Engineer	Engineering
Taylor Duke	Structures Engineer	Engineering
Chelsea Geary	Contracts Accounting Analyst	Finance & Accounting
Rod E. Harris	Electrical Engineer	Engineering
Michael Hoffman	Junior Software Developer	IS&S
Elton Kaler	Logistics Specialist	A&PM
Dylan Kovachev	Senior Systems Engineer	Engineering
Heaba Nouredine	Journeyman Systems Engineer	Engineering
Justin Nunley	Software Tester Intern	IS&S
Liem Phan	Stress Engineer	Engineering
Celine Ramirez	Software Developer Intern	IS&S
Joachim V. Ramos	Senior Logistics Analyst	A&PM
Edwin Rios	Logistics Specialist	A&PM
Barry Smith	Subject Matter Expert	A&PM
Caleb Toussaint	Help Desk Technician	IS&S
James Vietor	Logistics Analyst	A&PM



THANK YOU !

Communication is everything at Andromeda Systems Inc., so we are excited to continue to provide you the Galaxy Gazette on a quarterly basis. We look forward to hearing about other exciting news and events that you would like to share with us!