4 Co-Creating a Sustainable Value Chain

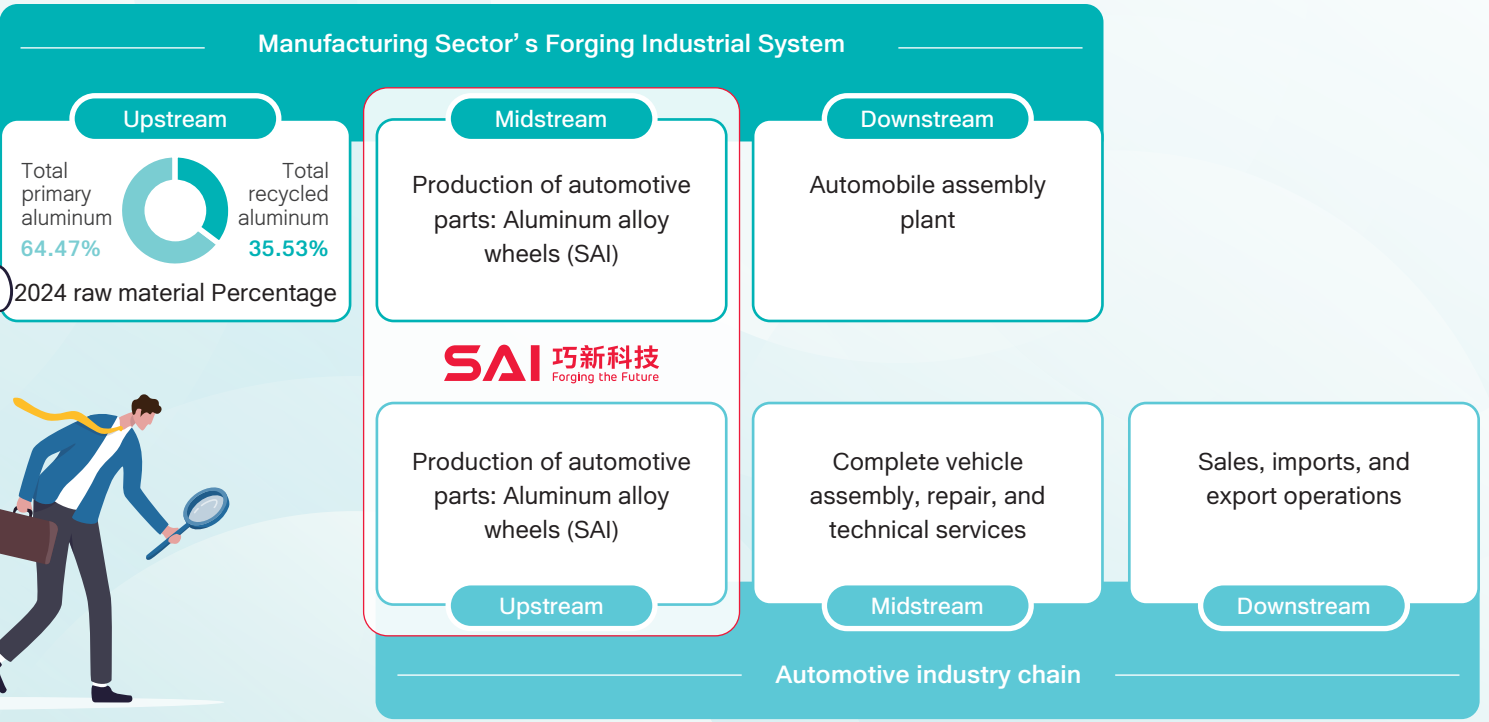
4.1 Innovation and R&D

Technical Research and Development (R&D)

SAI Value Chain

SAI specializes in providing aluminum alloy forging solutions, encompassing the development, production, and sales of automotive wheels and suspension system parts. We continuously develop innovative forging technologies, conduct R&D regarding new material applications, enhance design and engineering capabilities, and invest in lightweight benefits for forged products. The Company actively engages in discussions regarding other industrial parts suitable for forging services to expand our service offerings. Addressing the complexity and diversity of surface treatment processes, SAI offers optimization suggestions during the customer design phase, meeting the personalized, unique requirements of customer products.

Forging is positioned within the middle-tier metal processing industry of the manufacturing sector. Forging involves altering the metal structure to refine, homogenize, and fibrate material, thereby enhancing its mechanical properties suitable for manufacturing high-strength, lightweight products and components. SAI' s primary products include automotive wheels and various forged items, contributing to the upstream sector of the automotive industry. The interrelationship among the Company' s upstream, midstream, and downstream sectors is as follows:



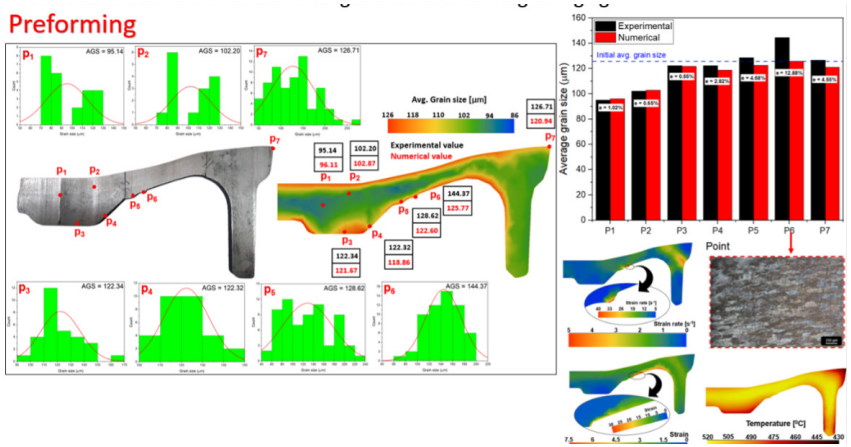
Research and Development (R&D)

The Company has a long-standing commitment to R&D, attracting domestic and international Ph.D. and Master's level talent. We have strong expertise in developing new materials, forging technologies, heat treatment processes, precision machining, surface treatments, and composite materials. We possess qualified aerospace-grade mechanical performance laboratories, corrosion laboratories, and fatigue performance laboratories to support R&D testing and verification. Additionally, we maintain close collaborations with industrial technology research institutes and academic research units such as the Industrial Technology Research Institute, National Chung Hsing University, and National Central University to continually upgrade our technical capacity. In 2024, SAI invested NTD 151,096 thousand in R&D expenses.

Item/Year	2022	2023	2024
Technical Research and Development (NTD Thousand)	142,203	153,056	151,096
Proportion of Revenue	2%	2%	2%

2024 Industry – University Cooperation Cases

Cooperation Partners	National Chung Hsing University	National Central University
Plan Content	• Sharing the cooperation results of the Light Metals Alliance. • Sharing principles and examples of damage analysis. • Greenhouse gas inventory skills and ESG sustainability report planning. • Sharing of aluminum alloy welding knowledge and progress. • Introduction to Nadcap aerospace certification and sharing of audit experience.	• A grain size evolution model simulation of AL6082 wheel near-net-shape forging was successfully established in Qform. Given that microstructure analysis and prediction technology remain in their infancy, early mastery and mature application could establish technological leadership in lightweight design and strength control. The collaborative study between SAI and National Central University predicted the microstructure error of less than 6%, confirming that the model is highly accurate and practical. In the actual manufacturing process, net shape forging technology refines the grain size by 61.66%, effectively improving the structural strength of the material, significantly benefiting the development of high-performance wheel products.



To encourage employees to engage in the Company' s innovative R&D efforts, SAI has established an Employee Innovation Incentive Management Policy. This policy includes bonuses and rewards for employees who propose innovations. It aims to enhance service and product quality and functionality, explore future development opportunities, and strengthen the Company' s competitiveness. With nearly three decades of experience and stable partnerships with international automotive manufacturers, SAI continues to accumulate a wealth of expertise in producing high-quality forged aluminum wheels.

Wheel and Suspension System Product Design

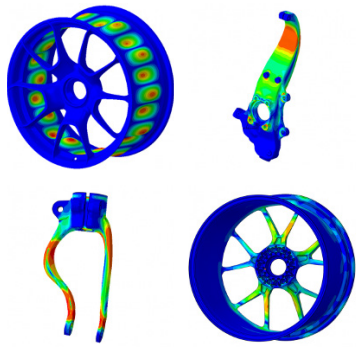
Establishing design parameters such as styling design, structural design, and analysis, aerodynamics, dynamic motion interference space utilization, dynamic and static strength, and fatigue strength. Providing lightweight product solutions and design rationale for automotive manufacturers, comprehensively meeting customer demands, and securing a leading position in the high-end product market.

Development of Lightweight Materials and Database Establishment

Developing materials such as aluminum alloys, titanium alloys, magnesium alloys, carbon fiber composites, and others, focusing on enhancing material properties through material design. Optimizing processes, fatigue properties, corrosion resistance properties, heat processing, and constructing databases to establish material usage specifications, maximizing material capabilities to enhance global competitiveness.

Recycled Aluminum Materials

The proprietary smelting recycled aluminum material, RESAICAL—utilized in forging production—has received customer certifications for mass production integration. We will continue promoting its application in lightweight solutions for vehicle suspension systems, investing in R&D with personnel and equipment to carry out in-depth research and to expand the technical field.



Technical Capabilities

SAI possesses design, engineering analysis, and manufacturing capabilities, utilizing Computer-Aided Design (CAD), Computer-Aided Engineering Analysis (CAE), and Computer-Aided Manufacturing (CAM) to produce high-quality forged products.

The technical prowess of SAI includes mold design and production, forging mold design development and mold flow analysis, precision machining of high-accuracy products, surface polishing optimization, and painting. During the design and development phases, Finite Element Analysis (FEA) is applied to compute optimized structures, thereby shortening design cycles, reducing costs, and delivering optimal lightweight designs.

Forging Techniques

SAI' s flagship products are forged aluminum alloy wheels that are produced using two main techniques to meet diverse customer needs. Full-machine forging enables high customization in design freedom. Net-shape forging reduces complex CNC machining time for large-scale production, ideal for bulk orders from luxury car brands.

SAI actively enhances brand penetration through full-machine and net-shape forging methods to expand potential markets. In the future, SAI will continue developing net-shape forging projects to improve operational efficiency, utilizing precision forging to streamline post-forging processes, simplify production flows, reduce production time and costs, and increase capacity utilization and asset turnover. Currently, 37 models of net-shape forged wheels are in mass production, with 60 models under development.

	Full-machine Forging	Net-shape and Near-net-shape Forging
Suitable Categories	Super luxury vehicles (e.g., McLaren, Rolls-Royce, Bentley)	Luxury vehicles (e.g., BMW, Mercedes-Benz, Porsche, Lexus)
Forging Process	• Moderate mold precision • Short production time • Cost-efficient	• High mold precision • Three forging stages • Higher cost
CNC Machining Duration	• Longer duration: requires a larger CNC machine factory area	• Reduces mechanical machining demand
Design Process	• High processing complexity • Long tool path design time	• Three forging stages, lengthy mold flow analysis
Material Costs	High	Low
Advantages	Diverse design capability: exquisite, intricately designed appearances suitable for small batch orders.	High automation level: reduces production costs, ensures stable quality, and is suitable for large batch orders.

Manufacturing Process

STEP 01

Forging

We cross reference simulation results through the simulation and analysis of multiple forging die flows using various forging simulation software. Final decisions and corrections are made based on SAI' s accumulated forging techniques, spanning many years, to mitigate potential process defects and optimize process conditions and designs.

STEP 02

Machining

Machining is tailored to meet the diverse, low-volume, and complex high-precision demands of customer products. Advanced computer-aided manufacturing is utilized to generate machining programs, ensuring high precision and quality surfaces in 3D complex curvature. This approach enables production with optimal surface finishes and high assembly precision.

STEP 03

Polishing

Polishing involves using specialized techniques and equipment to finely optimize product surfaces. Techniques include mechanical polishing, vibratory polishing, and wet high brightness polishing, tailored to showcase the inherent luster and natural color of forged aluminum materials based on customer requirements for appearance.

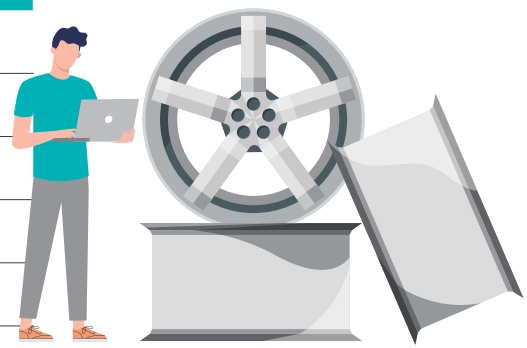
STEP 04

Coating

The coating process features fully automated robotic spray technology across the entire production line, offering a variety of coatings and colors to meet diverse requirements. Its automated capabilities ensure precise control over the visual quality. With today' s increasingly complex product landscape, SAI utilizes multiple techniques such as masking fixtures, machining, laser engraving, pad printing, and High-Resolution Non-Contact Transfer (HRNT) to fulfill the diverse needs of customers.

SAI continues to develop new technologies, improve design and processes, reduce consumables, and improve product quality. The R&D projects and benefits in 2024 are as follows:

Item	Attribute	Benefit
Developed new molds for horizontal continuous casting to increase mold production life while using them in mass production.	Smelting process	Reduces mold and consumables costs while improving production efficiency.
Established operating standards for wheel dynamic rotation, CFD flow field analysis (aerodynamics).	Wheel design	Provides customer services while significantly improving vehicle range.
Introduced AI models into corporate operations and product development.	All	Reduces implementation costs while improving development efficiency.
Developed the use of a robotic spraying method for release agent spraying operations in mass production.	Forging process	Reduces consumable costs while improving manufacturing quality.
Used net shape forging process to develop AMG wheel products.	Forging process	Reduces manufacturing costs while improving production efficiency.



Green Products

In the automotive industry, under the trend toward achieving net-zero emissions, reducing energy consumption is regarded as a crucial objective. Since vehicle lightweighting can reduce energy consumption, a 10% reduction in a vehicle's weight can generally lead to a 6% to 8% decrease in fuel consumption and improve fuel efficiency by 5.5%. Therefore, automobile manufacturers place significant emphasis on lightweighting. SAI's forged aluminum wheels simultaneously meet the high torque acceleration, lightweighting, handling, and safety requirements of electric vehicles. To date, we have delivered 39 models of electric vehicle wheels. Another 50 models are under development. In addition to lightweight product design, SAI is actively taking actions to minimize the environmental impact of production and product usage. The related performance is as follows:

Lightweight product design
Product structural lightweighting
4.1%

Improvement in forging material yield
Total thermal energy savings
13,033,186 kcal

Optimization during machining
Total electricity savings
9,194,044 KW

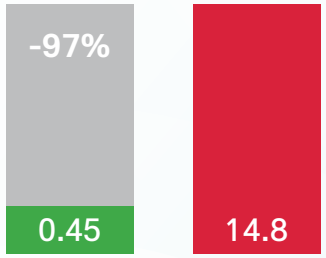
Recycling and reuse of scrap molds
Total cost savings
16,527,277 TWD

SAI RESAICAL® 100% Recycled Aluminum

Under the global ESG wave and the trend toward green value chains, automobile manufacturers are highly concerned with reducing carbon emissions from raw materials and manufacturing processes to meet their carbon neutrality commitments. As a Tier 1 supplier to internationally renowned supercar and luxury car brands, SAI actively supports the green manufacturing processes that these brands promote. Our core business initiative, RESAICAL®, a recycled aluminum product, has become the optimal ESG carbon reduction partner for our clients. The recycled aluminum provided by SAI has over 97% lower carbon emissions compared to primary aluminum. It has been certified and officially adopted by seven luxury car brands: Porsche, JLR, BMW, Toyota, Lexus, Stellantis, and Rolls-Royce. These brands use SAI's recycled aluminum for the design, development, and mass production of all future luxury sports car wheel products. With continued validation and adoption of RESAICAL® by new certified customers, we foresee robust, sustained growth in its future usage. This will help accelerate the Company's progress toward using 40% recycled aluminum by 2025, leading the entire industry chain toward green transformation. The materials, processes, and high-quality products provided by SAI are ideal low-carbon and lightweight solutions for our customers during their transition to net-zero emissions. In 2024, SAI achieved revenue of NTD 3.631 billion from 100% recycled aluminum products, accounting for 48.61% of our total revenue.

The energy used for recycling and remelting aluminum is only 3% of that required for smelting aluminum from bauxite. By prioritizing the recycling and remelting of scrap, machining chips, and offcuts generated during the manufacturing process, SAI recycles approximately 40,000 metric tons of aluminum annually. Each metric ton of recycled aluminum can reduce the environmental impact of bauxite mining by six metric tons and decrease carbon dioxide emissions by nine metric tons. SAI uses highly automated HERTWICH melting equipment to produce high-quality aluminum that meets international standards through low-energy production processes.

Based on 2023's data



Unit: CO_2e / kg

(0.45-14.8)/14.8 x 100% = -97%

SAI recycled aluminum	Dubai primary aluminum
0.45(kg CO_2e / kg of Al)	11.624(kg CO_2e / kg of Al)

RESAICAL® 100% Recycled Aluminum SAI

EGA الإمارات العالمية للألمنيوم EMIRATES GLOBAL ALUMINIUM

Compared to primary aluminum, the production of recycled aluminum can reduce carbon emissions by at least 97%.

SAI recycled aluminum has significantly lower carbon emissions than Dubai primary aluminum.

Intellectual Property Management (IP)

SAI emphasizes managing intellectual capital. Through strategic intellectual property management, we strengthen our R&D capabilities, promoting the development of innovative, high-value-added products and technical services while enhancing manufacturing process efficiency and product quality. The Company is dedicated to constructing, accumulating, and maintaining a comprehensive and forward-looking IP portfolio. Through risk management, we ensure that the Company can continuously strengthen its core competitiveness and increase profitability in a highly competitive market. Intellectual property rights are an indispensable cornerstone for SAI's continued innovation and market leadership. As of 2024, SAI has two new patents with a total of 24 patents remaining valid.

New Patent Technologies in 2024

Name of Patent Technology	
Molten forging device with ultrasonic piston device	**Laser processing method applied to wheel surface coloring and wheel**
Description of Technical Benefits	
Optimizing the mechanical properties and refined organization of traditional molten liquid forging and providing customers with multiple process options.	Providing customers with customized processing that breaks the frame with unlimited design choices.

Acquisition, Maintenance, and Utilization of Intellectual Property Rights

1. Conduct a patent information search and technical analysis before project implementation to avoid infringement.
2. Record and audit research logs, rigorously execute R&D plans, and review outcomes.
3. Obtain and maintain patents through application, examination, and publication procedures in accordance with the law.
4. Include provisions in employee employment contracts regarding the ownership of intellectual property rights, non-compete clauses, confidentiality, and non-infringement commitments.

Intellectual Property Layout

SAI leverages lightweight technology as its core competitive advantage, innovating and optimizing in areas such as material selection, design, structure, manufacturing processes, styles, surface treatment processes, and automation. The Company focuses on generating new knowledge, advancing technology, and establishing a comprehensive intellectual property layout. This includes managing patents generated during the R&D and production processes, strategically selecting and protecting key patents.

Intellectual Property Protection

The Company mitigates challenges from competitors and gathers sufficient evidence to protect patents by analyzing the technical features and targeted technological content of claims. For designs and devices that are easily analyzed by others, we adopt patent protection; for process parameters and methods that are difficult to analyze directly, we utilize trade secret laws to ensure the security of core technologies and maintain SAI's competitive advantage.

Intellectual Property Maintenance Procedures

The Company has established an R&D cycle procedure for patent protection within internal control regulations, encompassing planning, product design, mass production and testing, as well as the recording and preservation of R&D documents. This clearly defines the acquisition, protection, and utilization of intellectual property rights. When SAI performs well in overseas markets, we actively apply for patents to further consolidate the Company's rights. In cases of infringement, we issue legal warnings to suspected infringers, apply for injunctions in advance from the courts, and may even take legal action to cease the infringement.

4.2 Quality Management

Quality Management

SAI is committed to providing products of superior quality at fair prices, along with competitive creativity and responsiveness. We have established a quality policy of "customer satisfaction, full participation, continuous improvement," integrating a culture of high quality into our corporate core. This approach not only meets regulatory requirements but also fulfills customer expectations.

Quality Policy

Quality Improvement Proposal

Aligned with the pursuit of excellence and continuous quality improvement, SAI incentivizes all employees with a Continuous Improvement Bonus to encourage proposal submissions. In 2024, we received a total of 36 quality improvement proposals with a 100% implementation rate, resulting in significant cost savings of NTD 48.2899 million. The improvements achieved are as follows:

Reduced forging scrap rate and reduced manufacturing costs

- Improvement with HT products in the plant: By adding new escape holes and modifying the contour design of the forging blank, the shortage of material in the J part is effectively addressed, the scrapping rate is reduced, and manufacturing costs are reduced, saving a total of NTD 188,955.

Forging process, yield rate enhancement

- Improved yield rate for a single item by approximately 11%.
- Cumulatively saved approximately 108.6 metric tons of aluminum amounting to NTD 9,674,088 in cost savings from improved production outputs in 2024.

Machining process, optimized working hours improvement

- Based on the proposal, the status compared to improved total machine hours shows a reduction of approximately 10%.
- The actual cumulative improvement in 2024 amounted to 5,901,430 minutes, resulting in total savings of NTD 29,507,150.

Polishing process, cost improvement in grinding

- In 2024, polishing improvement measures reduced accumulated hours by 1,310,308 minutes, resulting in total savings of NTD 8,517,002 post-improvement.
- In May 2024, the Sheng Chang Yuan Far Back Rib Chamfering Machine project was introduced to improve the instability of manual chamfering and reduce grinding person-hours. It is expected that the test items will be completed and introduced from March to April 2025.
- Looking for a second supplier of polishing shafts to improve the shaft quality and reduce unit cost. The total benefit for the entire year of 2024 was NTD 402,720.

Quality Management Training

To implement effective quality management, SAI places significant emphasis on training relevant personnel to ensure they can proficiently execute management systems, enhancing the delivery of products and services of optimal quality. In 2024, the Company conducted a total of 10,793 hours of quality education training, comprising 8,645 hours internally and 2,148 hours externally.

Unit: Number of people passing

Name of Quality Training	2024
Primary non-destructive testing (PT liquid permeability testing)	1
APQP Version 3	39
AIAG & VDA FMEA Version 1	100
AIAG CP1 Version 1	9

International Quality System Verification

SAI adheres to rigorous production standards and operational processes, establishing a comprehensive quality management system. The Company has implemented the ISO 9001 Quality Management System, IATF 16949 Automotive Quality Management System, and ISO/IEC 17025 Laboratory Quality Management System. SAI actively pursues multiple certifications from accredited bodies, including:

GM Test Improvement Certification AN-0480

JWL Test Equipment Approval Certificate

SAE Laboratory Capability Certificate for Threaded Corrosion Testing

TAF Certification ISO/IEC 17025 Laboratory Quality Management System

IATF 16949 Automotive Quality Management System – Taiwan and Germany (four facilities in total)

ISO 9001 Quality Management System

SAI conducts assessments to mitigate health and safety impacts from products and services. The Company holds the following safety regulation certifications:

Safety Standards Certification	Number of Certifications	Details on the Offerings of Products/ Services to Customers	Percentage of Products Evaluated by Customers
INMETRO	74	414	17.87%
SNI	63	414	15.22%
VR	11	414	2.65%
BIS	11	414	2.65%
KC	164	414	39.61%
JWL	76	414	18.35%
TAC	2	414	0.48%

Note1. Percentage = (Number of products certified under the safety standards/Total offerings of products or services to customers)*100.
Note2. As clients do not require full certification of our products, evaluations are conducted selectively in specific styles, resulting in a non-100% aggregate.
Note3. Some products have obtained certifications from more than two countries.

Comprehensive Product Testing

All products offered by the Company are registered in the IMDS (International Material Data System) and undergo a series of tests and inspections, including visual, dimensional, functional, mechanical performance, and environmental assessments, before shipment. This rigorous process ensures product quality, providing customers with safe and reliable products, thereby safeguarding customer interests. In 2024, SAI delivered products to customers without incidents of non-submission due to prohibited substances, defects, or safety concerns that required product recall.

SAI Laboratory

Physical property testing

- Tensile testing
- Macroscopic metallographic examination
- Microscopic metallographic examination
- Brinell hardness testing
- Rockwell hardness testing
- Geometric dimension measurement

Chemical property testing

- Metal composition analysisv

Painting coating test

- Adhesion test
- CASS test
- Filiform corrosion test
- Stone impact test
- Salt spray test

Wheel functional testing

- Wheel impact test
- Radial load fatigue test
- Bending momen fatigue test
- Biaxial test

Note：Refer to the Company’s website for details of the test items and specifications.

Highlighted Equipment

Makra Bi-Axial Drum Test Rig

The Only Bi-Axial Testing Equipment Currently available in Taiwan. It simulates driving on the world’s most challenging racetracks, exposing the wheels to the harshest road surfaces and force conditions.

Product Traceability Marking

All products sold by SAI comply with the relevant product safety and labeling specifications required by each customer and importing country. Each product is marked with complete engraving for traceability of production information and material sources. The shipping packaging displays product numbers, quantities, supplier names/addresses, etc., enabling customers to trace and inquire about products. However, a recall occurred because some products were not engraved with vehicle codes, involving one vehicle model, with a total of 665 units recalled. In the future, SAI will continue to adhere to the highest standard of management principles to achieve stable production of high-quality products, reaching its quality commitment to customers.

4.3 Customer Service

Customer Service

SAI ensures dedicated sales channels and services for each customer, leveraging overseas offices and strategically positioned warehouses in Europe, the UK, North America, and Asia. This approach facilitates comprehensive management of distribution channels and customer relationships. Through localization strategies, including hiring personnel familiar with OEM practices, cultural differences, and international management challenges, can be effectively addressed, advancing toward global market penetration goals.

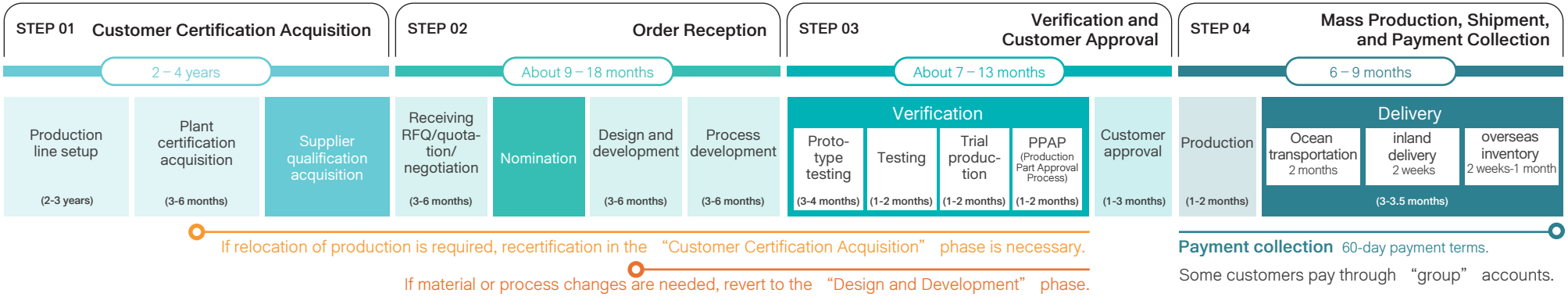
In response to the growing automotive industry and consumer focus on energy efficiency and carbon reduction, coupled with challenges from global energy crises and rising material costs, automotive components are increasingly engineered for lightweight and material efficiency. SAI excels in the forged aluminum alloy wheel sector, employing unique spinning forging techniques that balance strength and safety while meeting rigorous demands in the Americas and Europe. Future endeavors include expanding into promising Asian markets such as Japan and China. As an expert in forged aluminum alloy wheels, SAI actively pursues technological innovation in forging processes to develop competitive products that meet the requirements of industries such as vehicle transportation and aerospace, emphasizing lightweight, strength, environmental friendliness, quality, and safety.

Rather than competing on price, SAI builds trust with customers through reasonable pricing and a commitment to creativity, agility, and quality, earning customer preference. To date, the Company has served 43 branded customers and remains committed to sustainable development goals.

Responding to rising global environmental awareness, increasingly stringent carbon emission requirements along the value chain, as well as the expansion of the electric vehicle market, and lightweight/low-carbon product trends, SAI has actively introduced recycled aluminum materials. Thus, it has achieved a circular economy and expanded its market layout in the mobility industry. Looking to the future, facing policies such as the European Union' s CBAM, the United States' CCA, and Taiwan' s carbon fee, the industry' s demand for recycling raw materials is increasing. SAI plans to invest in the construction of a recycled aluminum smelting plant with an annual output of 60,000 tons. In the future, it will focus on forged aluminum and recycled aluminum and expand to cooperation in semiconductors, other mobility equipment, heavy electrical equipment, aerospace, and other industries, creating long-term value for customers and all stakeholders while jointly building a low-carbon future.

Solid Partnership Relations

SAI has actively maintained close collaboration with international clients over the years. By leveraging its R&D technological advantages, it continuously advances forging and molding techniques, explores new materials, enhances design and engineering capabilities, and optimizes the lightweight benefits of forged products. At the same time, SAI provides optimization recommendations during the design phase to meet the personalized and unique product requirements of customers. SAI has established indispensable partnerships with several international supercar and luxury car manufacturers. These collaborations bolster the Company' s long-term stable operational momentum.



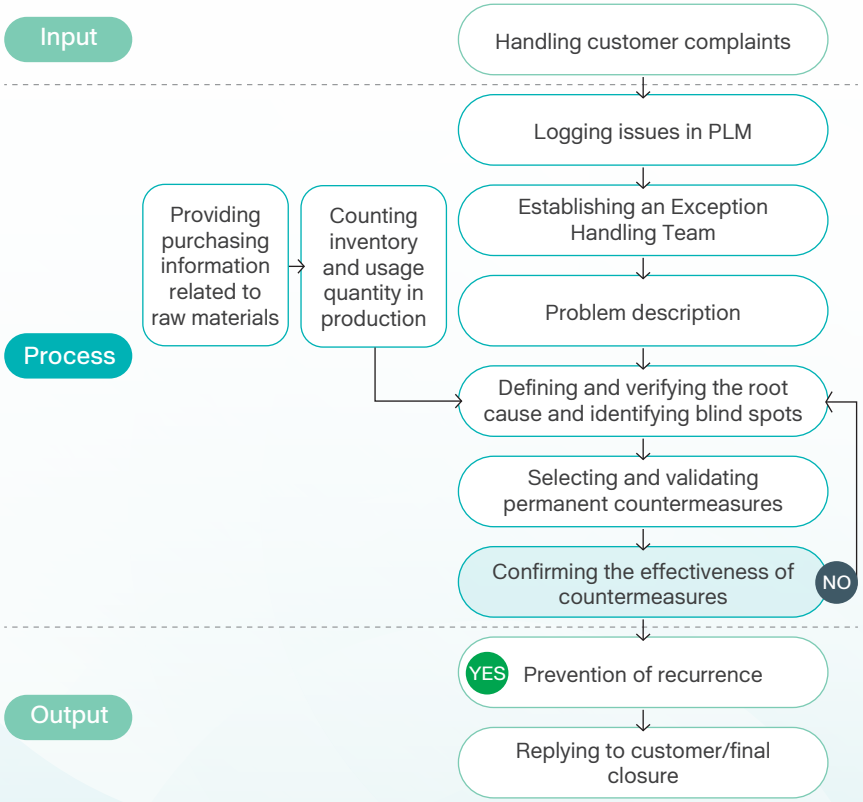
Customer Satisfaction Management

Achieving customer satisfaction is a key focus of SAI's management strategy. The Company is dedicated to providing products and services that meet customer expectations, optimizing the existing product portfolio while surpassing customer expectations to strengthen customer relationships and grow alongside customers toward sustainable development.

SAI has established a "Customer Satisfaction Survey Procedure," where the Customer Service Unit regularly compiles scorecard results from the customer system. The Department collects feedback monthly from key customers on various aspects of SAI, such as quality, cost, delivery time, and service. For any areas with abnormal customer satisfaction scores, the "Customer Complaint Handling Process" is activated. A cross-functional team is organized to conduct root cause analysis and propose suitable improvement plans.

In 2024, 58% of customers achieved a scorecard result of 80% or higher. Although there is still room for improvement in overall satisfaction, most feedback indicates that current challenges are primarily due to rapid changes in international market dynamics and the increasing difficulty of value chain integration. Due to increased order demand and geographical factors, some overseas customers have expressed higher expectations for localized supply and real-time delivery; the failure of third-party service units that customers cooperated with to update relevant information in real time also had an impact. There were also a few cases due to delayed logistics scheduling, resulting in short-term supply pressure. The Company has actively optimized global warehousing and packaging processes and strengthened cross-department collaboration and early warning management mechanisms. It is expected to effectively improve supply flexibility and overall service quality, maintaining customer satisfaction.

In 2024, there were five quality complaints, all of which have been resolved. SAI provides higher customer satisfaction through superior service and quality. The Company continually conducts customer satisfaction surveys, values feedback from all aspects, and proactively responds to customer needs, aiming to provide more benefits to customers to establish long-term, trustworthy relationships.



Customer Privacy Management

The Company rigorously ensures the protection of customer-related information. All business information, including documents and data exchanged with customers, is strictly controlled through SAI' s internal system. Approval and granting of operational permissions to relevant internal personnel are conducted in accordance with relevant operational standards and procedures. In addition to integrating various software and hardware containing technical data and any data that may involve customer intellectual property rights into our control measures, we sign confidentiality agreements with customers and suppliers to safeguard the security of customer confidential information. Moreover, "Customer Privacy Protection" is included in the training curriculum for new employees and annual training programs to ensure each employee performs confidentiality duties when interacting with customers.

To enhance product competitiveness and meet global customer needs, we operate a headquarters in Taiwan, a subsidiary in Germany, and business offices in the United States and Europe. We actively establish distribution channels and promote customer service across various countries. SAI proactively encourages integrating the Electronic Data Interchange (EDI) platform with customers and subcontractors, providing multiple operations such as order processing, shipment information, and invoice information transmission to accelerate order processing and improve data quality between customers. In handling shipments with freight forwarders, we offer a collaboration platform, enabling subcontractors and customers to independently inquire about pickup and shipment statuses, enhancing overall operational efficiency.

SAI is currently one of the major suppliers to 43 high-end brand car manufacturers worldwide. As the automobile industry undergoes rapid digital transformation, the risks of information security are increasing daily. In recent years, the Company has continued to invest significant resources to strengthen information security. In addition to obtaining ISO 27001 Information Security Management System verification in 2023, it has continued to promote the TISAX Vehicle Safety Assessment Information Exchange Platform Verification to align with international vehicle network security standards. In February 2024, it officially obtained the TISAX®(AL3) Information Security and Prototype Protection label issued by Germany, indicating that the Company makes every effort to protect confidential information related to customer products.

SAI' s Commitment to Customer Privacy

" Customer-oriented, strictly safeguarding customer confidentiality, upholding the principles of integrity. "

4.4 Supplier Management

Supplier Management

Supplier Overview

SAI' s suppliers can be categorized as raw materials, machinery and equipment, and engineering subcontractors. In 2024, there were a total of 916 domestic and international suppliers, with 865 based in Taiwan, accounting for 94.43%.

Adhering to sustainable corporate management principles, SAI' s procurement strategy prioritizes local suppliers for non-raw material purchases, except for bulk raw materials like aluminum ingots that must be sourced internationally. This approach shortens the acquisition time for materials and enhances production efficiency; it reduces the carbon footprint, supports local economic stability, and increases employment opportunities.

Proportion of Local Procurement

Local Procurement	2022	2023	2024
Proportion of Local Procurement Amount (note 2)	39.56%	48.33%	43.65%
Total Number of Suppliers	914	906	916
Number of Local Suppliers	865	859	865
Proportion of Local Suppliers	94.64%	94.81%	94.43%

Note1. Definition of local: location of the trading partner.
Note2. Since Taiwan does not produce aluminum, SAI primarily sources raw materials from the EGA Group, purchasing aluminum from Dubai Aluminum. Excluding the procurement amount of aluminum supplied by EGA, the proportion of local procurement amount in Taiwan for SAI in 2024 is 88.59%

Risk Management of Key Raw Materials

The Company signed annual procurement agreements with key raw material suppliers to ensure supply continuity and closely monitors customer demand fluctuations to make necessary adjustments. We have also conducted material testing with other international aluminum suppliers and have qualified alternative suppliers to ensure smooth transitions if supplier changes are required. SAI also produces recycled aluminum with superior material quality and a stable supply.

Supplier Standards

To implement supply chain management responsibilities, SAI has formulated several specific management requirements and cooperation guidelines for suppliers, encompassing diverse issues such as environmental sustainability, information security, and human rights. We are building a responsible and resilient supply chain system through the joint efforts of supply chain partners. The relevant standards are as follows:

Conflict Minerals Declaration Requirements

The Company requires raw material suppliers to provide a declaration stating they do not use conflict minerals. To enhance supply chain management, we effectively screen and trace the origins of materials, ensuring the exclusion of conflict minerals. Any raw materials with conflict concerns are not considered for evaluation.

Environmental, Health, and Safety Management Requirements

The Company established an Environmental, Health, and Safety (EHS) organization to promote related initiatives, along with procedures for the occupational safety and health management of suppliers and contractors. These procedures are part of supplier audit activities aimed at increasing the attention and actions of supply chain vendors on EHS issues. In practice, suppliers must comply with government EHS regulations and cooperate with the Company's EHS audits. For on-site construction, suppliers must sign a "Contractor EHS Management Acknowledgment" and complete pre-entry EHS training.

Information Security and Prototype Protection Management Requirements

To strengthen information security management and ensure the confidentiality, integrity, and availability of our information assets, the Company has established relevant policies and regulations to comply with legal requirements and customer demands regarding information security and prototype protection. To maintain close cooperation within the supply chain, suppliers accessing "confidential" or "highly confidential" information assets or handling prototype products related to new development projects must continuously enhance their management of information security and prototype protection. They are required to adhere to our related terms and audit activities.

Supplier Code of Conduct Requirements

The Company is committed to ensuring that supplier selection and evaluation exceed economic standards. Emphasizing human rights, labor standards, business ethics, environmental protection, and safety, we require suppliers to comply with sustainability standards. We expect suppliers to adopt the same standards and have their business activities meet these standards as well as the legal requirements of their operating countries. The Company expects suppliers to ensure that this Code of Conduct is communicated to their employees, subsidiaries, affiliates, and contractors. The Company reserves the right to verify compliance throughout its supply chain.

Greenhouse Gas Inventory Requirements

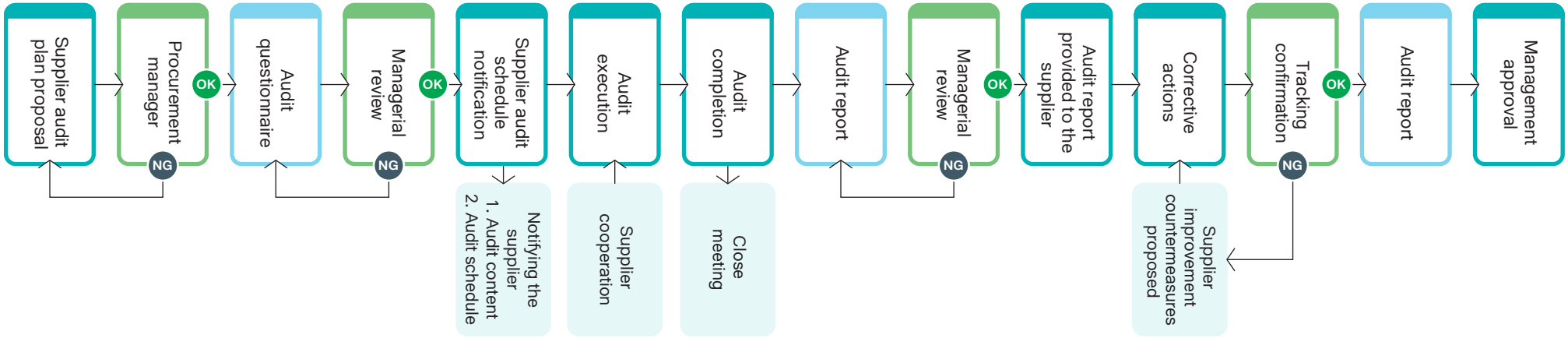
To implement sustainable risk management of the value chain and drive the entire value chain toward a low-carbon future, the Company has included carbon inventory operations in the supplier evaluation bonus points and encouraged suppliers to implement the greenhouse gas inventory. To understand the implementation status of suppliers' carbon inventory and use it as the basis for the Company's calculation of reducing Scope 3 emissions, a carbon inventory implementation status survey is conducted on prominent suppliers, jointly creating a sustainable value chain.

Supplier Audits

To enhance stakeholder recognition of our Code of Conduct, the Procurement Unit signs an "SAI Supplier Code of Conduct" when commercial contracts are established with business partners, service providers, and suppliers. Signing the Code of Conduct is a prerequisite for becoming a qualified supplier of SAI. As of 2024, suppliers who have signed the Code of Conduct covered over 90% of the procurement amount in 2024. Among the top 200 suppliers to SAI, 163 have completed the signing process. Among the top 100 suppliers to SAI, 97 have completed the signing process.

Implementing the principle of responsible procurement, SAI has established a "Supplier Audit Control Procedure" as the basis for conducting audits of supplier compliance with the Code of Conduct. This procedure stipulates that thorough due diligence is performed on major suppliers, with regular monitoring to ensure responsible procurement policies are implemented. It serves to verify whether suppliers adhere to the Code of Conduct and maintain high standards of business ethics, social responsibility, and environmental stewardship, supporting SAI's commitment to corporate social responsibility. Our audit personnel perform supplier audits according to the procedure and document audit findings in the "Supplier Code of Conduct Audit Report." In 2024, SAI conducted Code of Conduct audits on six major suppliers in accordance with this procedure; results indicate no significant breaches.

Supplier Audit Process



Supplier Carbon Inventory Status

SAI began inventorying and assessing its suppliers to reduce Scope 3 and overall supply chain carbon emissions in 2023. It monitors whether suppliers have obtained or complied with ISO 14064-1 and GHG Protocol standards and is assisting suppliers in 2024 and 2025 in establishing smart energy management platforms. This initiative aligns with the Ministry of Economic Affairs' "Large Enterprise Assists Small Enterprises" program, targeting four leading suppliers. IoT-enabled smart meters will be installed to monitor energy and water resource usage, allowing suppliers to track consumption in real-time via an app. These efforts help SAI monitor supplier environmental performance and establish management goals for supplier governance. At this stage, gateways, software, and IoT-enabled smart meters have been installed at the facilities of four suppliers; the public cloud greenhouse gas management platform has been launched, completing 80% of the overall plan. In 2024, among the top 20 surveyed suppliers, two have obtained greenhouse gas inventory certification, with four more expected to apply for ISO 14064-1 certification by 2025.

2024 Assessment of New Suppliers

SAI's 2024 new suppliers enter the procurement process only after a 100% pass rate on their evaluation (including social and environmental standards). The new supplier categories are distributed as follows:

Supplier Categories	Number of New Suppliers in 2024
Category A Suppliers (for products and components)	3
Category B Suppliers (for production-related needs)	3
Category C Suppliers (suppliers not belonging to the above categories)	52
Outsourced Suppliers (outsourced for production or processing with raw materials or semi-finished products provided internally)	1
Contractors (factory construction, repair, utilities, equipment maintenance, etc.)	24

2024 Supplier Evaluation Results

Supplier Categories	Evaluation Items and Weighting	Number of Suppliers/ Proportion	Grade A	Grade B	Grade C	Grade D	Grade E	Total
Category A suppliers	Quality 30% Delivery date 25% Service 20% Price 15% International certification/ other 10% (including international carbon inventory requirements)	Number	2	19	1	0	0	22
		Proportion	9.09%	86.36%	4.55%	0%	0%	100%
Category B suppliers		Number	32	81	0	0	0	113
		Proportion	28.32%	71.68%	0%	0%	0%	100%
Outsourced suppliers		Number	11	9	0	0	0	20
		Proportion	55%	45%	0%	0%	0%	100%

Evaluation Grade	Score	Result	Evaluation Frequency/Non-Conformance Handling
Grade A (Excellent)	90~100 points	Qualified	Listed as a Qualified Supplier, evaluated annually.
Grade B (Good)	80~89 points		Listed as a Qualified Supplier, evaluated semi-annually.
Grade C (Pass)	70~79 points		Listed as a Qualified Supplier, evaluated quarterly.
Grade D (Observation)	60~69 points	Observation	Listed as an Observation Supplier, evaluated monthly. Improvement is noted according to deficiencies, with reduced procurement and delayed payment. Continuous classification as Grade D for three months results in listing as a Non-qualified Supplier if no improvement is observed despite guidance.
Grade E (Non-qualified)	Below 59 points	Non-qualified	Listed as a Non-qualified Supplier, transactions are halted.

4.5 Industry Associations and Advocacy Organizations

Participation of Industry Associations

SAI thoroughly evaluates and actively participates in industry associations, willingly sharing knowledge, information, experience, and best practices to leverage industry influence and lead continuous growth. Key associations and organizations SAI participates in are as follows:

Association Name	Membership Status
Yi Yun CEO Club	Member
Alliance for Stress Optimization and Measurement of Metal Machined Parts at Chung Hsing University	Ordinary member
Taiwan Transportation Vehicle Manufacturers Association	Class A member
Taiwan Aerospace Industry Association (TAIA)	First-tier member
Taiwan Light Metals Association	Member
Yunlin County Labor Relations Association	Member
Pingtung County Industrial Association	Member
Yunlin Hsien Industrial Association	Member
Yunlin Technology Industrial Park Association	Vice Chair(taking over as Chair from February 2025)

Advocacy Organizations

ASI (Aluminum Stewardship Initiative)

In July 2023, the Aluminum Stewardship Initiative (ASI) officially announced SAI's achievement of the ASI Performance Standard V3 (2022) certification. "Sustainability" is a crucial component of SAI's corporate strategy; we are honored to be a member of ASI. Aligning with automotive electrification trends, SAI continues to explore and develop the potential applications of forged aluminum. We are committed to a responsible aluminum value chain, striving to maximize the contribution of aluminum's value.