21st Century
Supply Chain Development

SC21 Program
Collaboration not confrontation!
The purpose of the SC21 program is to offer organisations a vision of operational and organisational excellence and a step by step program to achieve that vision through collaboration.
Role of S-MAS

- Support Improvement of Manufacturing Performance in Scotland.

Within the SC21 Program

- Coordinate the Scottish Steering Committee.

- Regional Partner for Scotland.

- Facilitate companies in progressing through the programme.
### SMAS Scottish Manufacturing Advisory Service

#### SC21 - Process

<table>
<thead>
<tr>
<th>Customer Engagement</th>
<th>Diagnostics</th>
<th>Continuous Sustainable Improvement Plan</th>
<th>Recognition</th>
</tr>
</thead>
</table>

#### Business Group Formation
- SC21 Implementation business group
- Key: KG: Key Customer, K: Key, L: Leader, S: Supporter

#### Quality Certification
- [LAQG](#)
- [Nadcap](#)

#### Manufacturing Excellence

#### Business Excellence

#### Relationships

#### Code of practice

### Metrics alignment

- **On time delivery**
  - Key: KG, K, L, S, G, P
  - Definition: Number of on time deliveries / Total number of deliveries
  - This shows the % of on time deliveries

- **Quality**
  - Key: KG, K, L, S, G, P
  - Definition: 1 - (Number of defects / Number of delivered)
  - This shows the % of first time

- **Number of defects**
  - Definition: Number of defects / Total number of deliveries
  - This shows the % of non-conformances

- **Number of defects x 1,000,000**
  - Definition: Number of defects per million

### CSIP

#### Award Metrics

#### Industry Recognition
The SC21 Program uses a series of diagnostic tools to facilitate the development of a ‘gap’ analysis against acknowledged best practice in three key areas:

• Operational Activities
• Organisational Activities
• Customer/Supplier Relationships
Operational Activities:

‘How we make things or deliver a service’

The Manufacturing Excellence diagnostic measures operational activity against Lean best practice.
The Manufacturing Excellence diagnostic also measures how the organisation's senior management team are enabling Lean and deriving business results across the boundaries of the company, including customers and suppliers.
Organisational Activities:

‘How we operate as a business’

The Business Excellence diagnostic measures organisational activity against the EFQM Excellence Model
The Determining Excellence diagnostic measures 9 areas of organisational activity:

- Leadership
- Policy & Strategy
- People
- Partnerships & Resources
- Processes
- Customer Results
- People Results
- Society Results
- Key Performance Results
Customer/Supplier Relationships:

‘How we build collaborative relationships’

The Relationship Excellence (RelEx) Framework facilitates organisations in embedding collaborative working as an approach.
The objective of the CSIP is to incorporate all of the internal business improvement opportunities, the Customer requirements and any regulatory/sector requirements into one focussed improvement plan.
The philosophy of the CSIP is centred on the concept of Plan, Act, Do, Check as the foundation for Continuous Improvement.
Key Requirements of the CSIP

• Senior sponsorship and ownership

• Project management by a skilled team

• Is the focus for improvement activities.

• Risks and Dependencies need to be identified

• Must be subject to regular reviews
## SC21 - Award Framework

<table>
<thead>
<tr>
<th>award level</th>
<th>delivery</th>
<th>quality</th>
<th>sustainable improvement programme</th>
<th>improvement framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>gold</td>
<td>&gt;99 - 100%</td>
<td>99.9% - 100%</td>
<td></td>
<td>excellence level &gt; 500</td>
</tr>
<tr>
<td>silver</td>
<td>&gt;95 - &lt;99%</td>
<td>99.5% - &lt;99.9%</td>
<td>plan progressed regular reviews</td>
<td>excellence level &gt; 400</td>
</tr>
<tr>
<td>bronze</td>
<td>&gt;90 - &lt;95%</td>
<td>98% - &lt;99.5%</td>
<td></td>
<td>framework deployed</td>
</tr>
</tbody>
</table>
For further information relating to SC21, go to the ADS website at:

https://www.adsgroup.org.uk/pages/53492373.asp
Questions?
The Manufacturing Excellence diagnostic measures 20 elements of operational activity.

### Visual Control

**Improvement Activities**
- Topical activity board, displaying what improvement activities are actually taking place – links to CSI
- Daily / weekly meetings centred around the visual control board
- Targets are shown for all improvements e.g. quality, delivery, cycle time

**Skills Matrix**
- All relevant skills for the work area are identified on the matrix, including ‘soft skills’
- Skills are aligned to current and planned capacity demand
- Evidence exists that these competencies are actively used and updated
- Training programme in place to support future requirements

### Productivity Improvement

- All work area members have been trained in the tools and techniques to identify and eliminate Waste
- Waste removal and defect reduction activities are active and displayed, SMART actions noted
- Non-value added manual processes have been automated
- Target / actual Productivity displayed

### 7 Wastes

**Processing**
- Value stream mapping is used routinely to identify opportunities for improvement in manufacturing time
- Process efficiency (value added time ÷ total lead time) is improving, targets are set
- Process operations are optimised
- Equipment design is appropriate and effective

**Inventory**
- Products are manufactured in pre-defined batch sizes
- Only planned material and WIP in cell and planned finished goods held as stock
- Awaiting batch sizes delivered by Suppliers - aligned to cell usage
- Inventory management process optimised to maintain gain
- Kanban agreements in place

**Transportation**
- Minimum distances required to transport product, tools, materials
- Facilities arranged to achieve uni-directional product flow
- Close coupling of operations - work benches, tooling, materials
- Transportation media is designed to fully protect the product from damage

### Set Up Reduction

- Detailed analysis of set up elements and evidence of continual improvement (internal and external)
- Key processes have addressed SUR activity
- SUR activity links to inventory and batch size reductions
- Target and actual set-up time is displayed and analysed

### Standardised Job

- Standards defined - A formalised method / time study has documented procedures, tasks and times relating to Manpower, Machines, Equipment and Materials
- All teams/cell members understand and have contributed to the standards
- Standard job ‘benchmark’ - insignificant deviation in actual versus standard time, any deviations are analysed

### 7 Quality Tools

- All work area team members are trained in use of the 7 Quality Tools - Pocket Guides are used for reference and training/examples held on local network
- Suppliers / external process, audit and inspection data is collected and stored for easy access and interrogation
- Evidence that many of the 7 Quality Tools are used by cell members

### Statistical Process Control

- All processes have been assessed for SPC applicability
- Operators are trained in collection and analysis of SPC data, thorough understanding of SPC principles
- Cp/K of 1.66 being achieved
- Operators taking action on out of control conditions

### Overall Equipment Effectiveness

- All key equipment have OEE measures displayed showing current status
- The measure is higher than industry average of 60% and approaching best in class of 85%
- All Team members understand OEE principles and action on any deviation in performance
- OEE data collection is automated

### 5S Workplace Organisation

- Area is clean and in order, "show room" type environment
- 6S 'Sustain' is evident
- 6S standards or policy are displayed and agreed by all in cell
- Pathways, storage areas, safety equipment, all work areas and hazards are clearly marked

### Kanban

- Supply and demand synchronised via use of appropriate Kanban techniques
- Kanban applied to all areas within the supply chain (internal and external)
- Customer & Supplier agreements in place
- Extensive use of Kanban techniques on non-product inventories
- All in cell trained in Kanban techniques