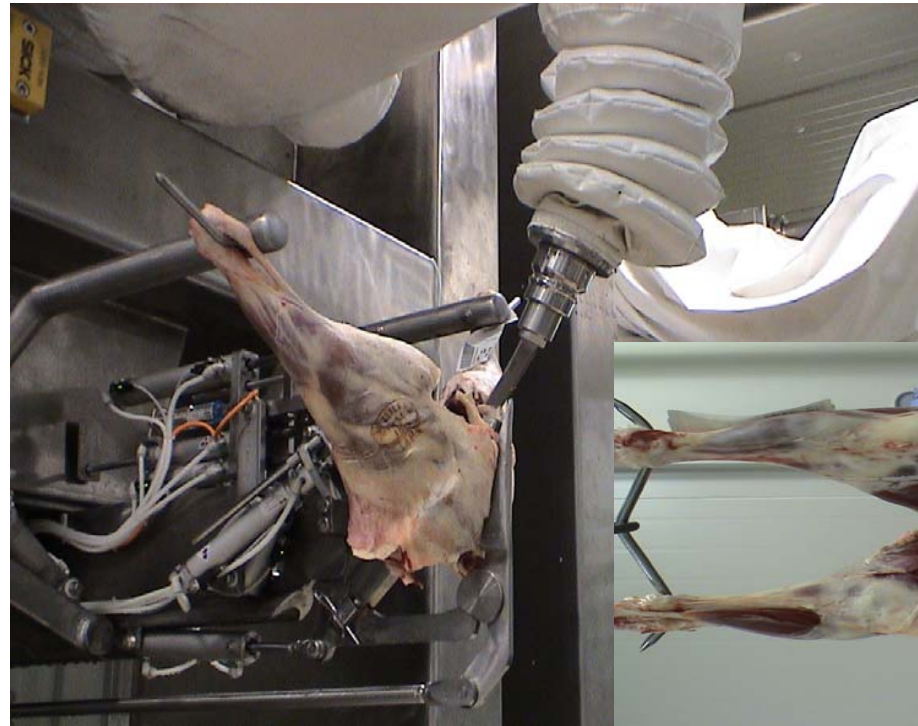




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<http://www.scott.co.nz>



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Meat Industry Automation – The Way Forward

Outline

- Scott Technology
 - Robotic Technologies
 - X-Ray – Enabling Technology to Boning Room Automation
 - Lamb Boning Room Vision & Developments to date
 - Beef Development
-



Scott Technology Ltd

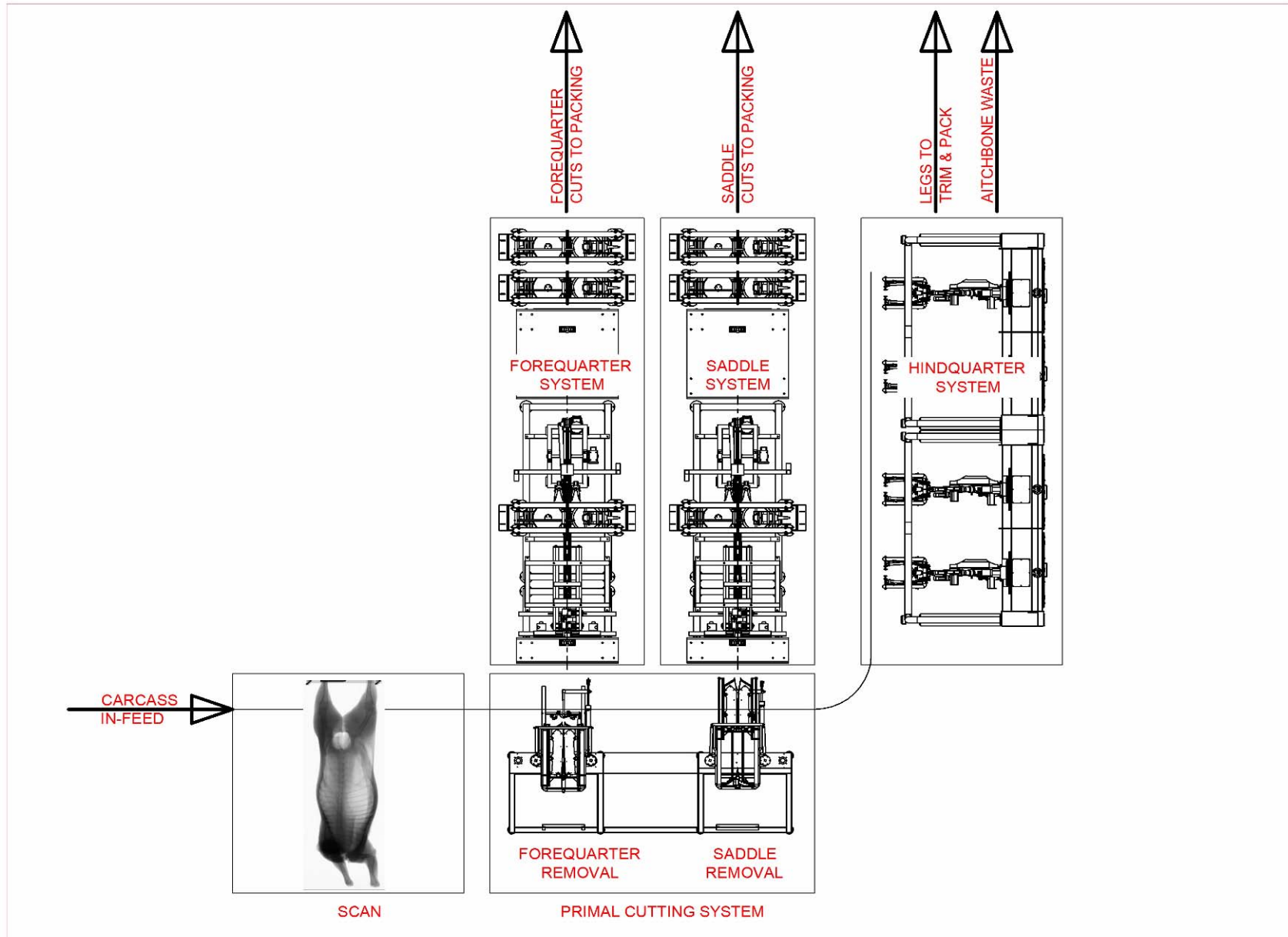
- Scott Technology Ltd is a company listed on the New Zealand Stock Exchange NZX code SCT
 - Over 90 Years in business – Established in Dunedin, 1913
 - 180 staff (170 engineers) – 2 manufacturing facilities and International offices
 - Global provider of automated production systems
-



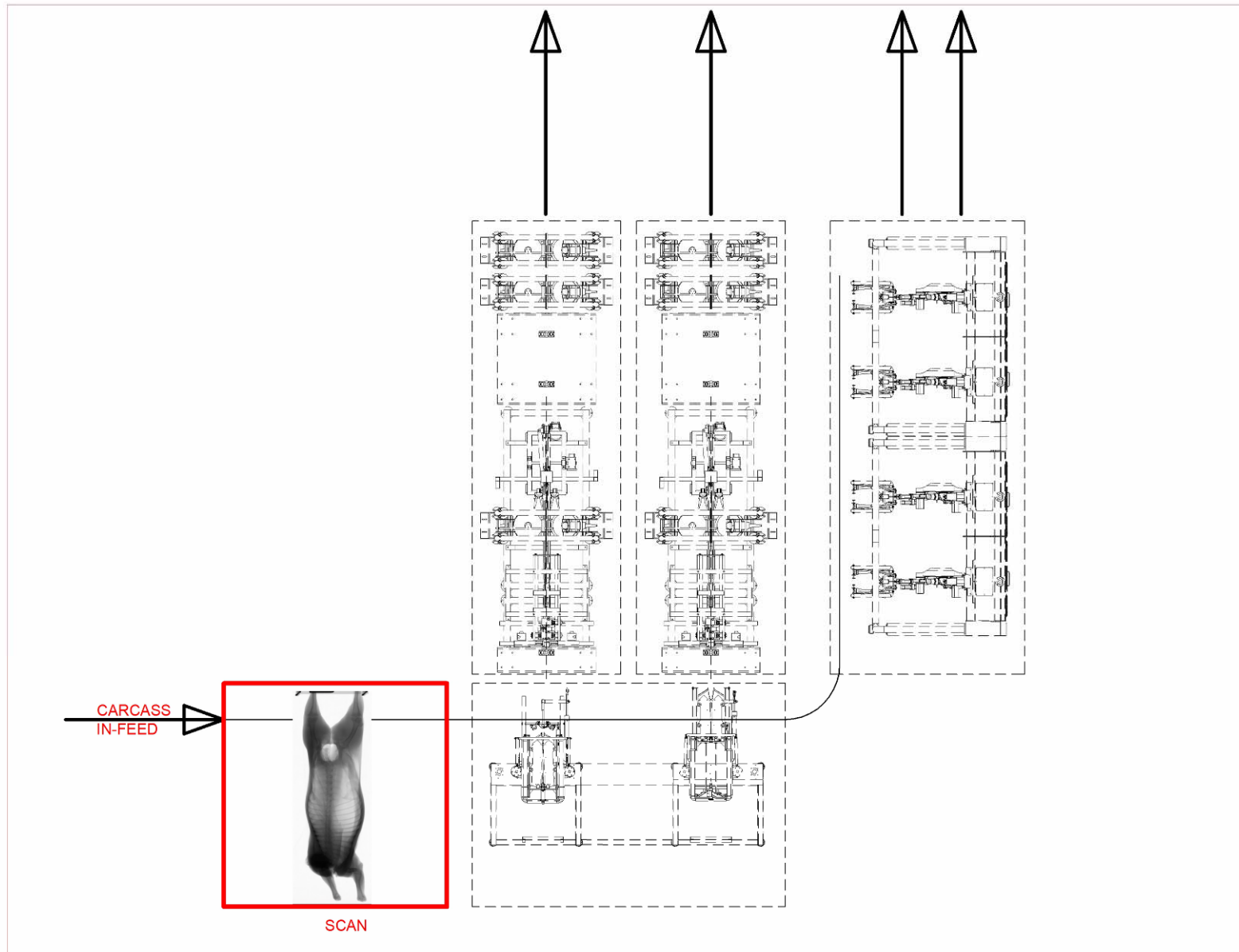
Robotic Technologies Ltd (RTL)

- Joint Venture company between Scott Technology and PPCS
 - RTL established to undertake R & D and to commercialise developed technology
 - RTL holds the Patents of developed technology
 - Vision to develop a “Fully Automated Lamb Boning Room” for Lamb boning
 - Development of Beef boning “assist” system
-

RTL Automated “Lamb Boning Room Vision”



X-Ray





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X-Ray – Enabling Technology to Boning Room Automation

- Issues with external vision.
 - Failed to achieve the accuracy required to fully realise potential benefits of Primal System (ie Bones are buried in Meat)
 - Alternative technologies investigated with MLA involvement. X-Ray only realistic alternative at this time.
 - Continuous digital line-scanning technology suitable for high production rates (configured at 10 carcasses per minute).
 - X-Ray reference digital data provide accurate cut reference points utilised in current and future stages of the automated boning room.
 - Developing X-Ray Grading
-

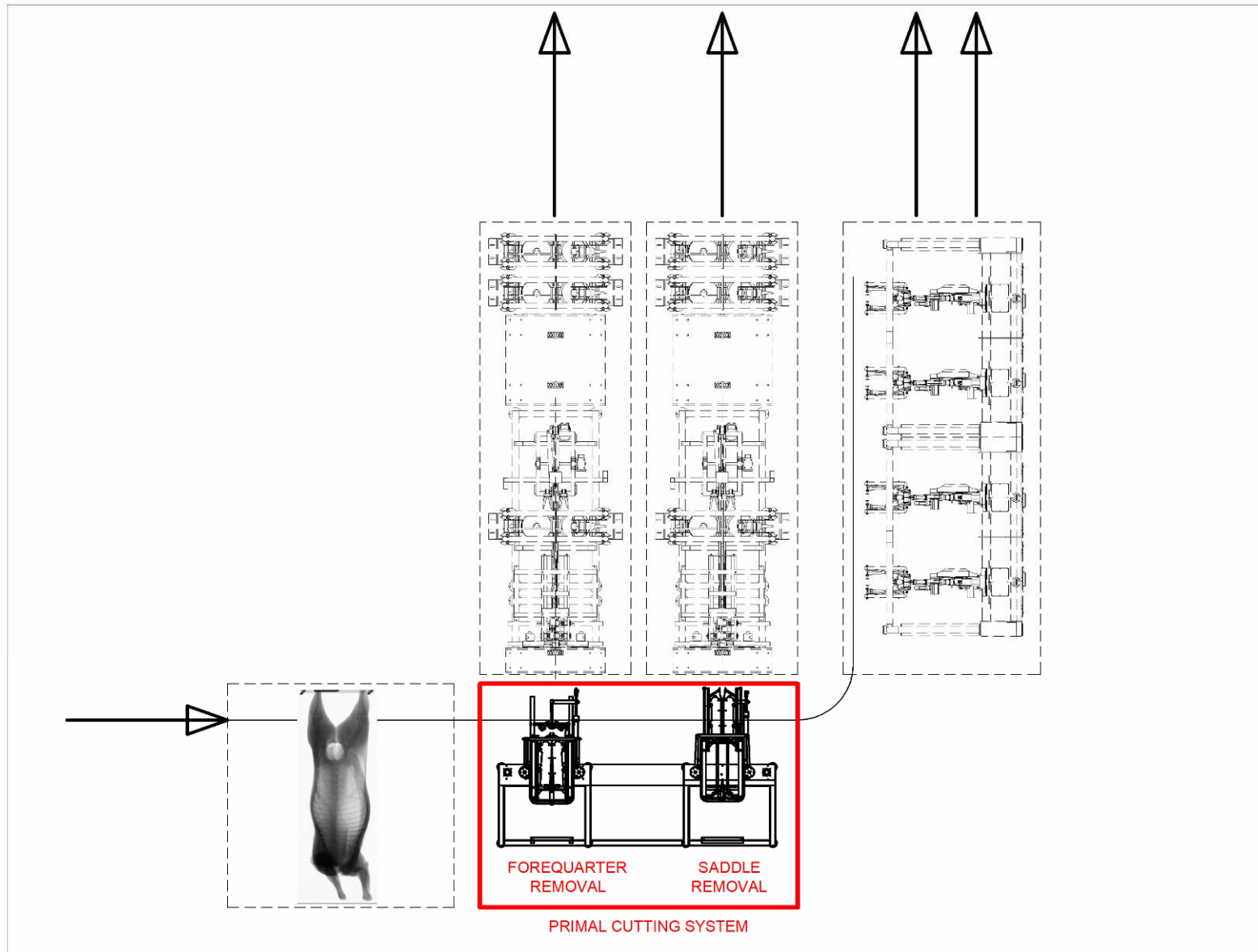


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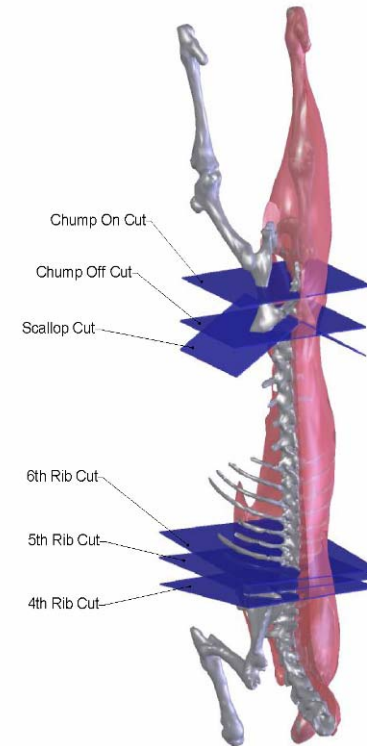
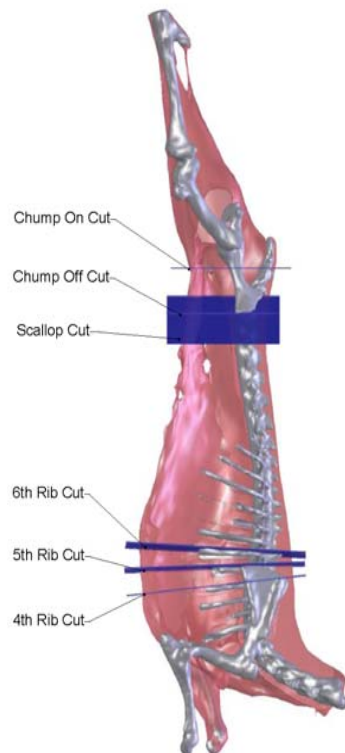
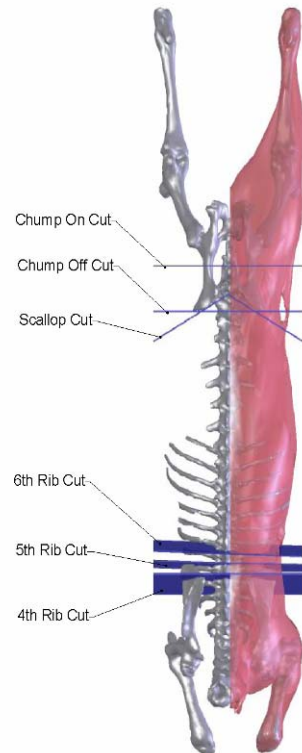
X-Ray Challenges encountered / Learning's to date

- Rib count - Identifying the first rib surrounded by shoulder muscle and bones.
 - Learning curve for our company working with x-ray technology.
 - Coping with highly variable organic product.
 - Stabilisation of the product for reliable scanning.
 - Misunderstanding and paranoia about the dangers of x-ray (introduction into the boning room).
 - Developing x-ray analysis software
 - Software making decisions to identify when the image analysis has got it wrong.
 - Calibrating images to real world coordinates.
 - Optimising expensive x-ray hardware to ensure the system is commercially viable.
-

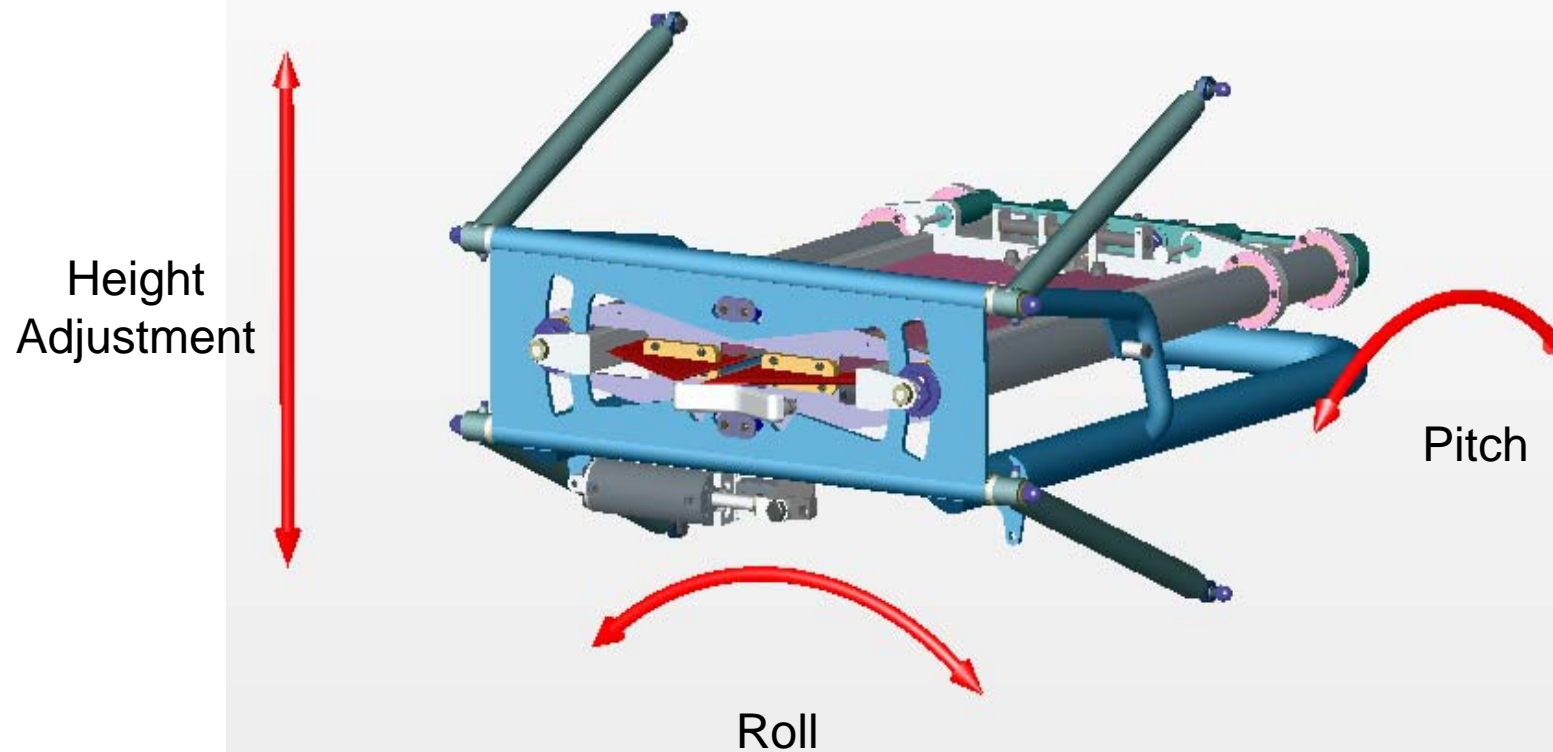
Primal Cutting



Primal Cut options

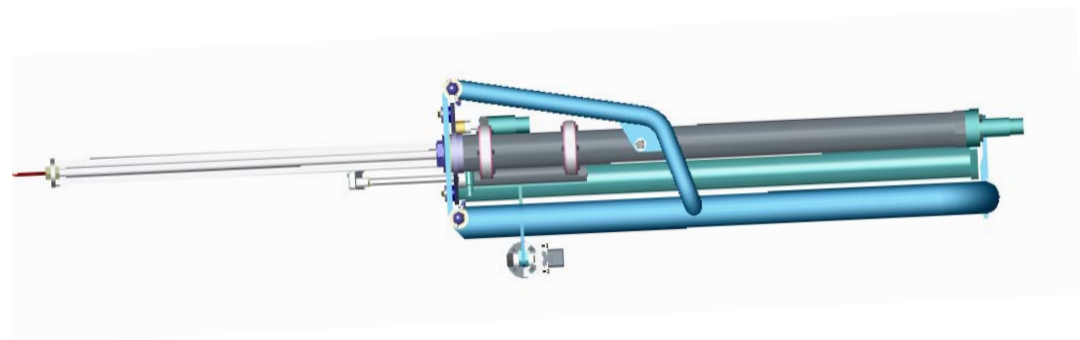
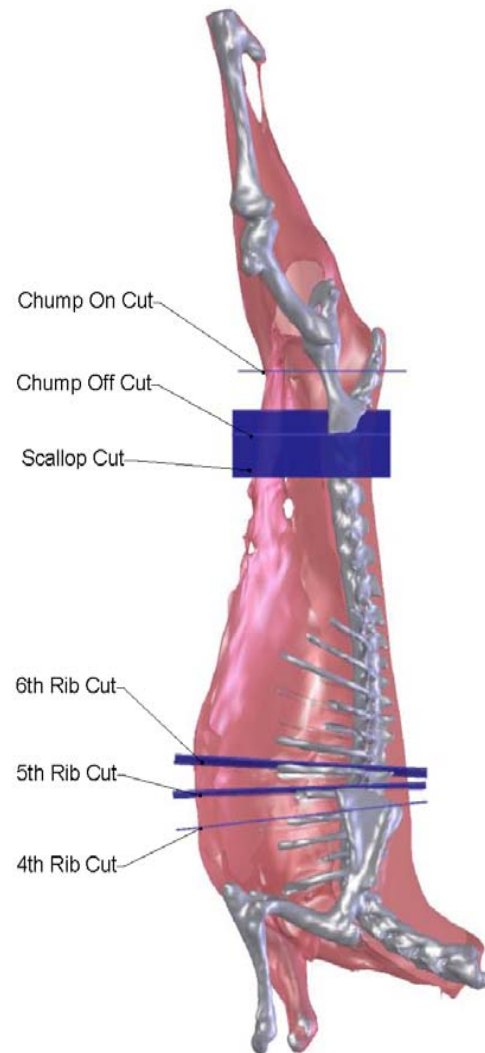


Forequarter Cutting Station

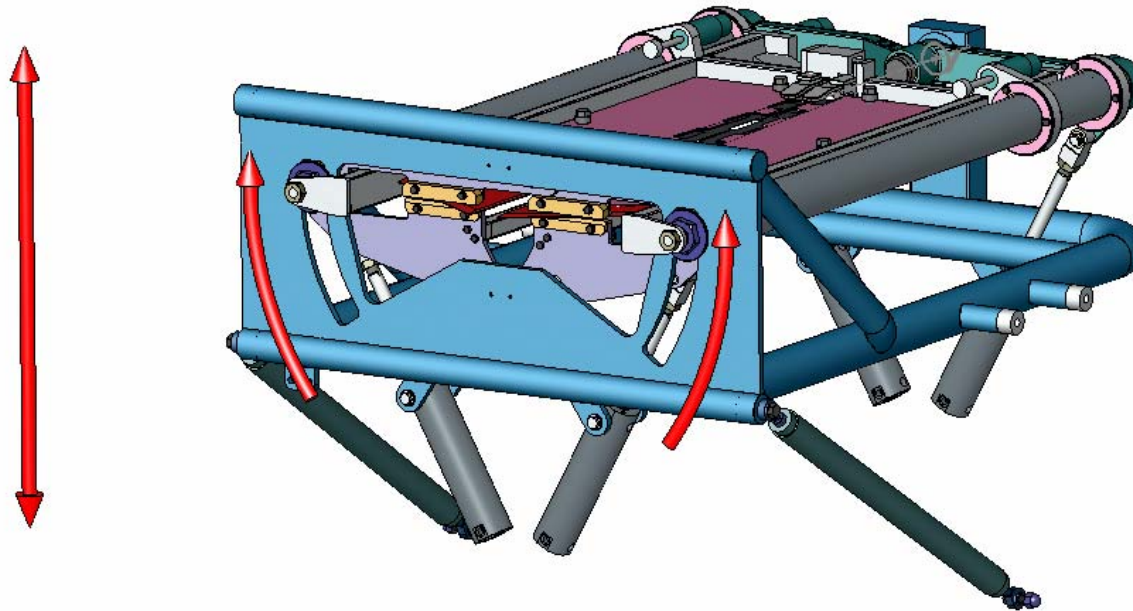


Forequarter Blades fixed

Forequarter Cutter – 5th Rib position

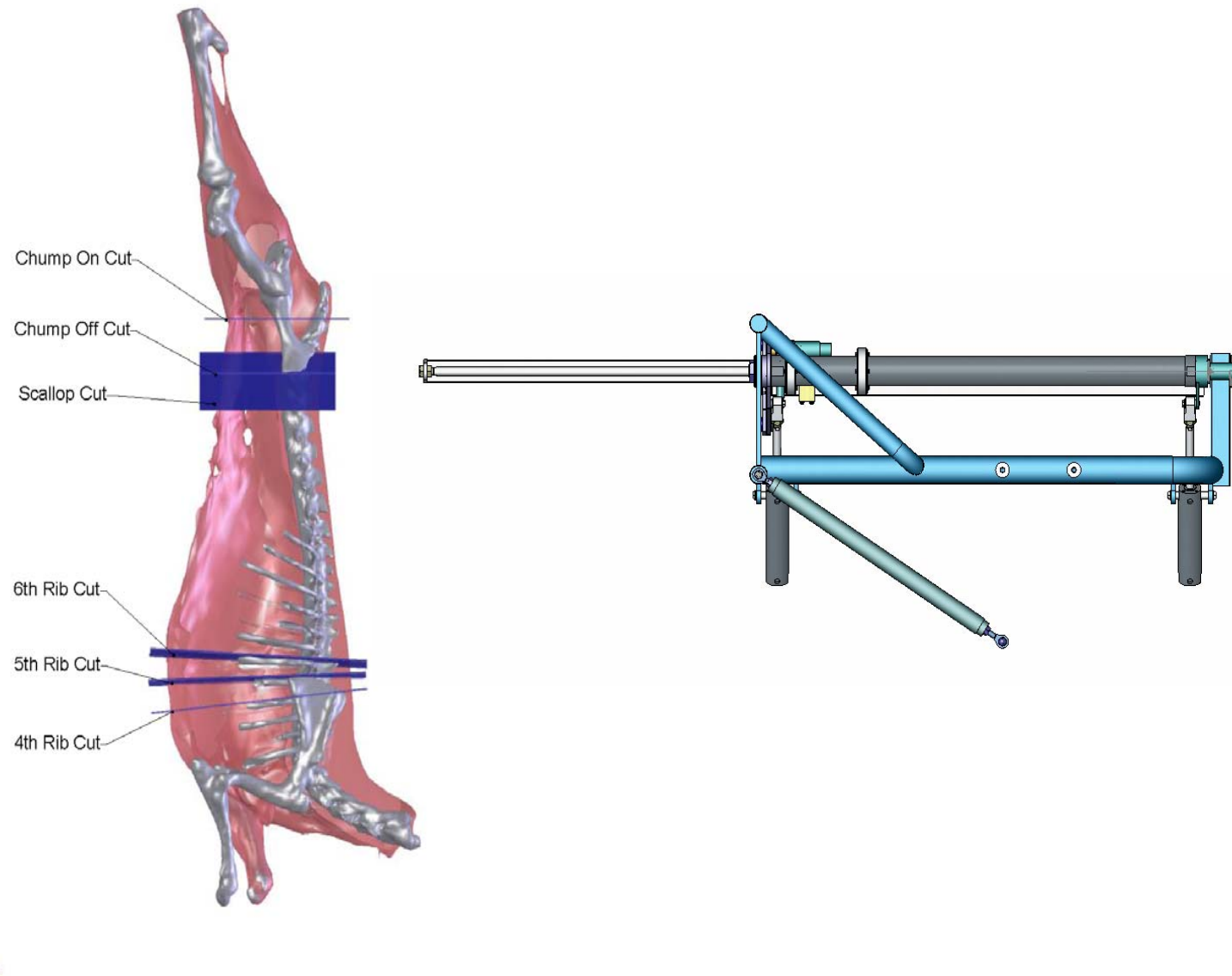


Saddle Cutting Station

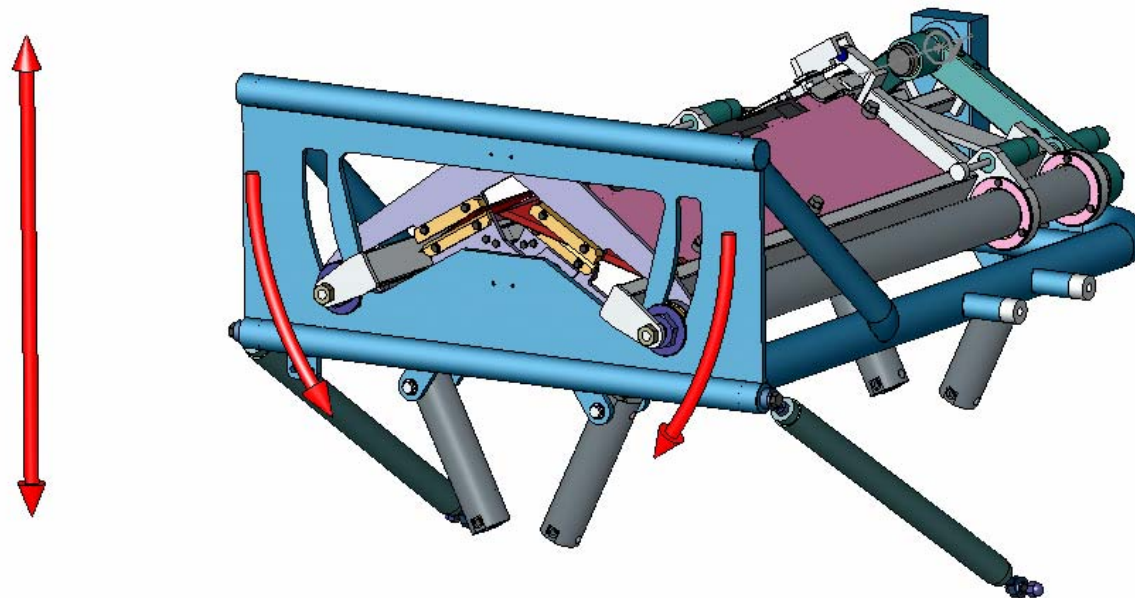


Saddle Blades set for Chump on/off cut

Saddle Cutter – Chump Off position

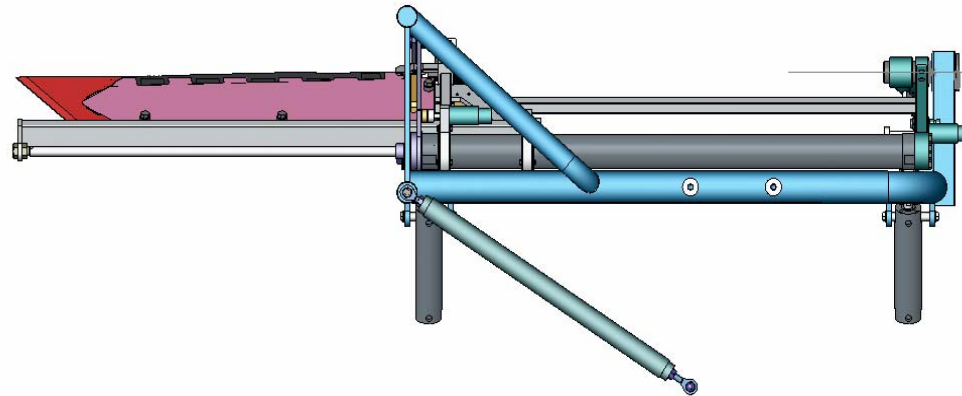
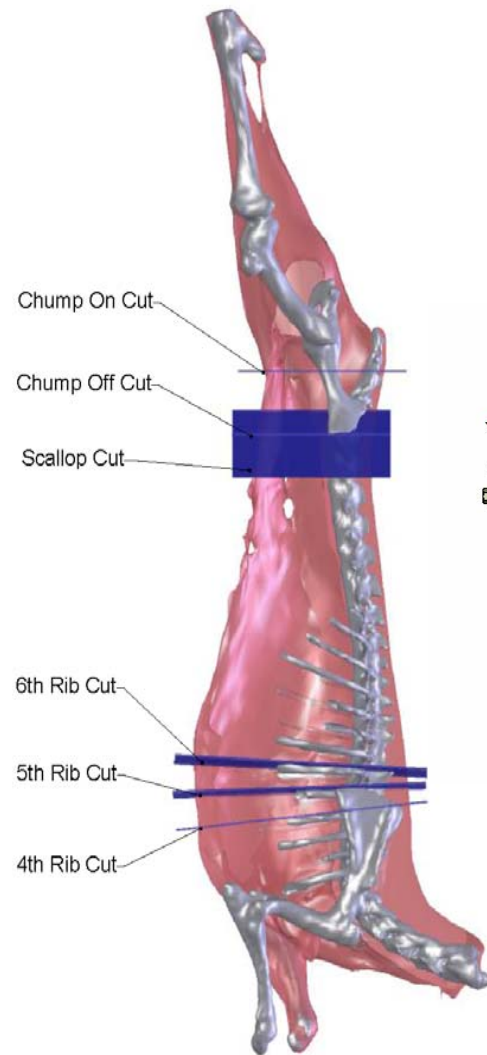


Saddle Cutting Station

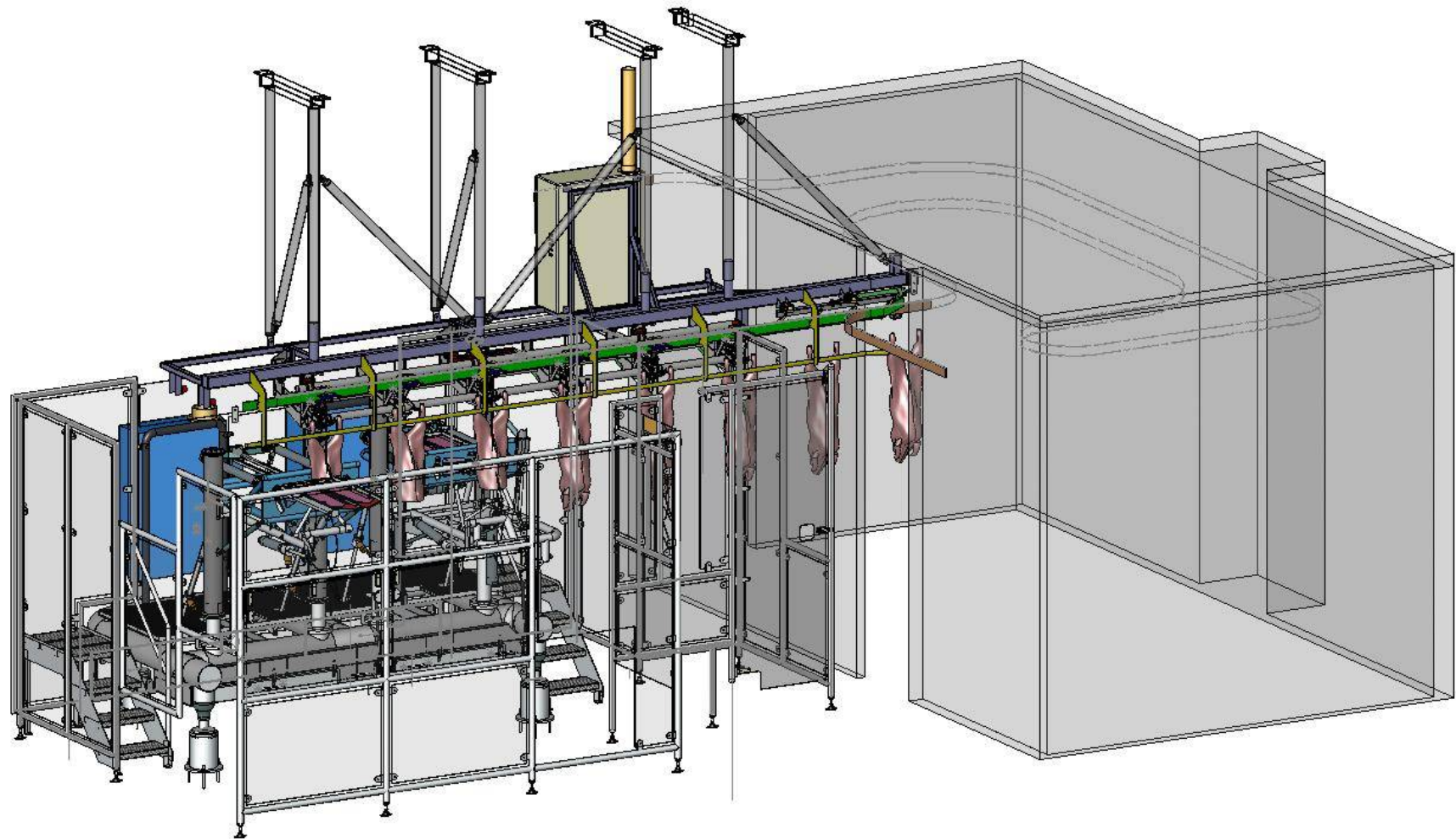


Saddle Blades set for Scallop cut

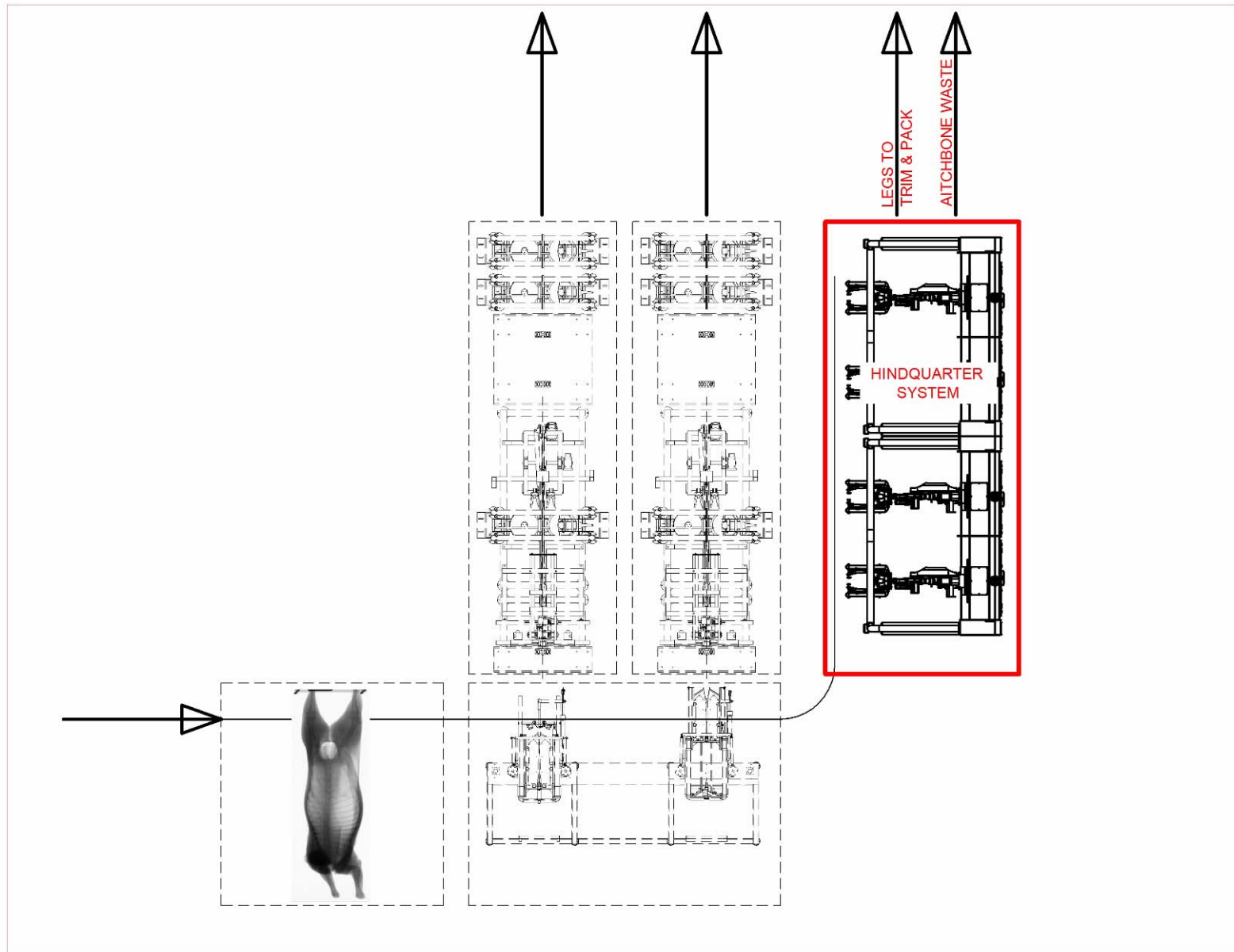
Saddle Cutter – Scallop position



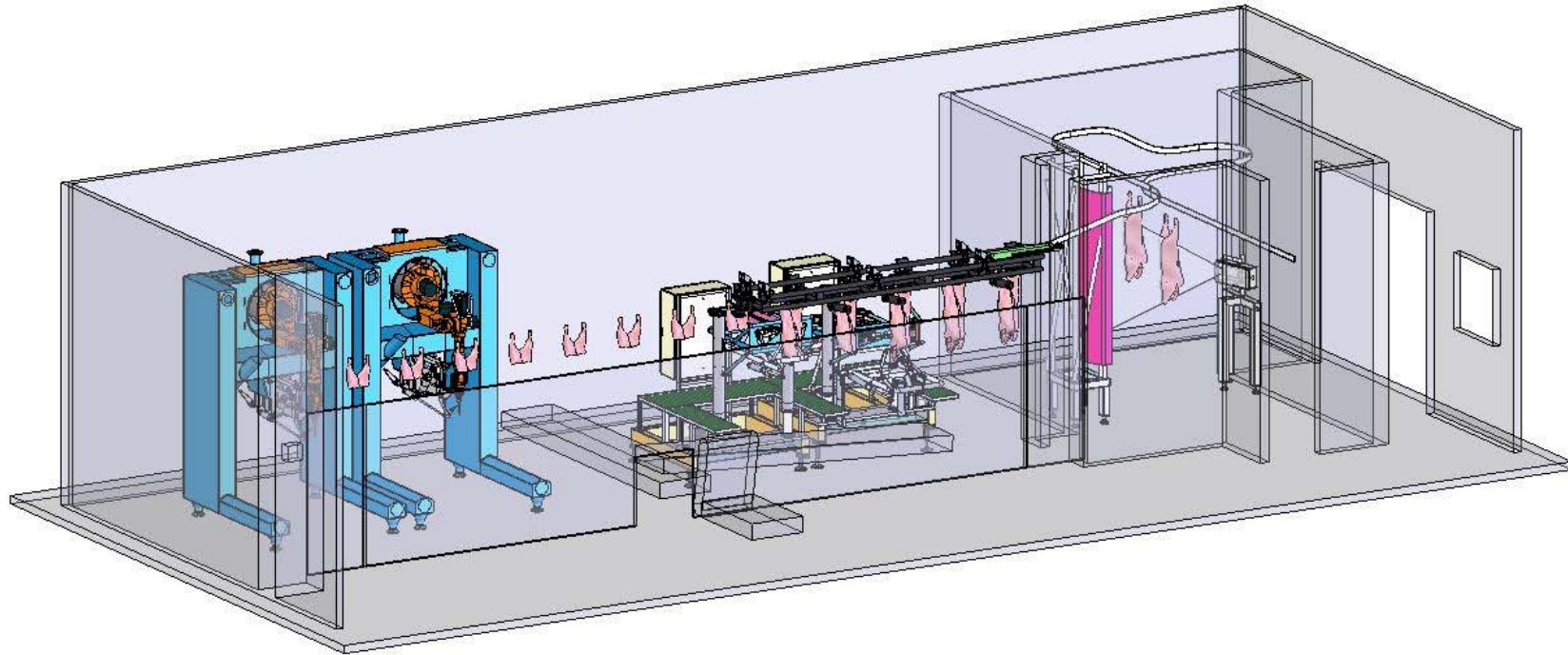
Integrated X-Ray / Primal System



Hindquarter Machine



Integrated X-Ray, Primal, Hindquarter Machines





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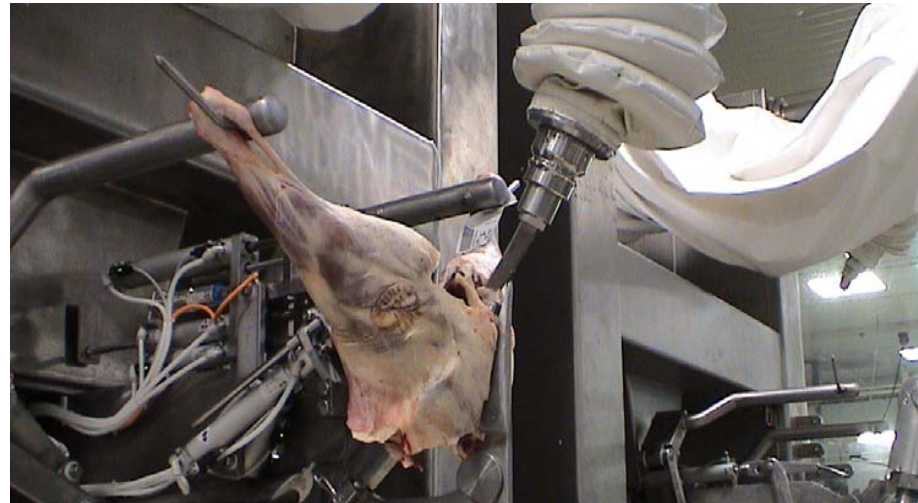
Beef Boning

- Beef Boning “assist” machine Developed in conjunction with the Australian meat industry & PPCS
 - Developed to (but not limited to) Aitch bone and Knuckle pull.
 - Benefits include
 - OH&S
 - Yield gain
 - Short Payback
 - Minimal room modification
 - Customised to suit processors requirements
 - Currently manufacturing the first commercial machines.
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