



“Preventing equine fractures with safe, high-quality CT imaging.”

## Executive Summary

**Company Overview:** Asto CT was founded in 2015 with the mission of developing a standing equine computed tomography (CT) system, Equina™, a tool to prevent and diagnose fractures of the lower limbs of horses, while also meeting the need for head and neck scanning in older horses. Asto CT holds an exclusive license from the Wisconsin Alumni Research Foundation (WARF) for an issued patent covering this concept. Serial entrepreneur Thomas “Rock” Mackie and two world-renowned veterinarians, Peter Muir and Mark Markel, founded Asto CT. David Ergun joined the team as CEO with the goal of partnering with original equipment manufacturers (OEM’s) to integrate an existing CT scanner with robotic positioning technology to bring the product to market rapidly. The initial target market for Equina™ will be high-volume equine veterinarians in the US. After a successful US launch, there are several market expansion opportunities including international equine practices, longer-term human-use applications such as proton therapy and standing CT, and industrial applications.

**Product:** The Equina™ is a robotics-driven CT platform that can be used to image a mildly-sedated standing horse in a natural load-bearing state. The critical innovation is the incorporation of robotic positioning with an existing wide-bore CT gantry. The flexibility of movement afforded by the robotics will allow the CT gantry to be oriented both vertically and horizontally, enabling the scanner to easily be moved into the appropriate position for multiple equine indications without requiring complex positioning of the horse or use of general anesthesia. Clinical imaging protocols (software and safety mechanisms) for scanning the head, neck and limbs will be developed and validated in partnership with the University of Wisconsin-Madison School of Veterinary Medicine. FDA clearance is not required for veterinary imaging products, enabling a short timeline to product launch.

**Customer Needs & Asto CT’s Solution:** Horses, particularly racehorses, are susceptible to lower limbs injuries. With about 1,000 race starts a day in the US, three racehorses are euthanatized every day, mainly due to catastrophic lower limb injuries that may also result in injury to the jockey. Many of these fractures are stress fractures that could be prevented with screening. Lameness in show and recreational horses represents another major diagnostic challenge. Equine veterinarians recognize the value of cross-sectional imaging, but technological limitations have not supported broad adoption. X-ray and ultrasound are widely used, but lack the diagnostic sensitivity to effectively prevent injuries. CT scanning of the limbs of horses cannot be done today without general anesthesia, which requires a

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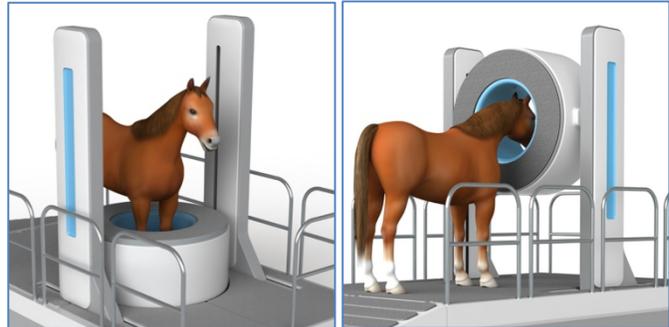
**Industry:** Medical Devices

**Management Team:**

David Ergun (CEO)  
Thomas “Rock” Mackie (Chair, Co-Founder)  
Dr. Peter Muir (CMO, Co-Founder)  
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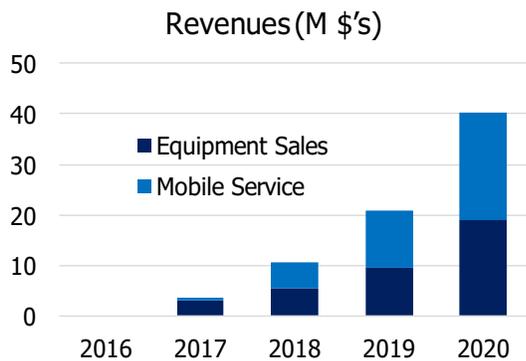
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400-600kg horse to be intubated, anesthetized and placed in lateral recumbency on a table. Because of the cost and risk of anesthesia, this is rarely performed for diagnostic purposes. The Equina™ addresses these challenges by offering a flexible robotic system that allows horses to be rapidly scanned in a load-bearing state under only mild sedation.

**Market Description & Sales Strategy:** There are 0.9 million Thoroughbred racehorses and 6.6 million horses for showing and recreation in the US. Approximately 1,300 veterinary practices focus predominantly on horses. Based on the number of practices, willingness to pay for imaging, and assuming near full market penetration in the high-risk-prone racehorse segment and 20% in showing and recreation, the global market potential of an equine standing CT system is \$800 million. Asto CT's sales strategy is to initially place systems in markets where horses are commonly bred, trained and raced. The company will realize revenue through direct sales to large practices and veterinary medical schools, supplemented by a mobile imaging service to appeal to practices that lack the space or client volume to justify purchasing a system. Longer term, Asto CT will derive revenues from a distribution partnership with an equine medical device provider with an established larger sales force.

**Competition:** Potential competition for Asto CT comes from digital radiography, MRI, and other CT scanners. Digital radiography is inexpensive but requires a large number of images to be acquired and lacks diagnostic sensitivity. MRI has the potential to improve diagnostic sensitivity but long scan times lead to motion artifacts. An x-ray based robotic-driven scanner is under development by Equine 4DDI (New York, NY), which reportedly will be able to scan a sedated horse in a standing state – to date, no volumetric images have been shown. Based on the available description, 4DDI's imaging approach may lack diagnostic quality and sensitivity, the product configuration appears to be vulnerable to damage from a startled horse, and the system would likely require a highly trained operator. Asto CT is determined to make the diagnostic quality Equina™ rugged and easy to use, and has a development strategy that will lead to a better cost-position. These will be major competitive advantages.



**Financial Highlights:** Based on steady sales of equipment and ramp-up of the mobile imaging service, Asto CT is projected to reach positive cash flow in 2018, and revenues will climb to \$40 million in 2020. Asto CT will use OEM manufacturers to design and build the Equina™ system. This will minimize investment in full time employees, reduce business risk, and allow for a rapid product launch with predictable margins. This approach will also allow Asto to rapidly scale up production of devices if demand exceeds projections.

**Capital Requested:** Asto CT seeks \$350K to close a pre-series A (seed) round of \$1,500K convertible note. These funds will be used to complete the design and development of the first Equina™ device. After successful completion of this unit, Asto CT will raise Series A capital of \$3.5 million to launch the Equina™ with typical terms for a company at this stage. Shareholders would be presented with their first exit opportunity in 2018, when the company is profitable, and Asto CT begins to build a backlog of orders. At this point, companies in the veterinary market, such as Universal Systems (Solon, OH), or private equity groups that specialize in buyouts and mezzanine growth could become an attractive exit opportunity. M&A multipliers of 3 to 5 on revenue or 10 to 15 on profit are typical. The value of Asto CT in 2020 could be as high as \$90 to \$130 million when annual revenues are expected to reach \$40 million.