

# TRACKAXLE®

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## The Bitrax Project

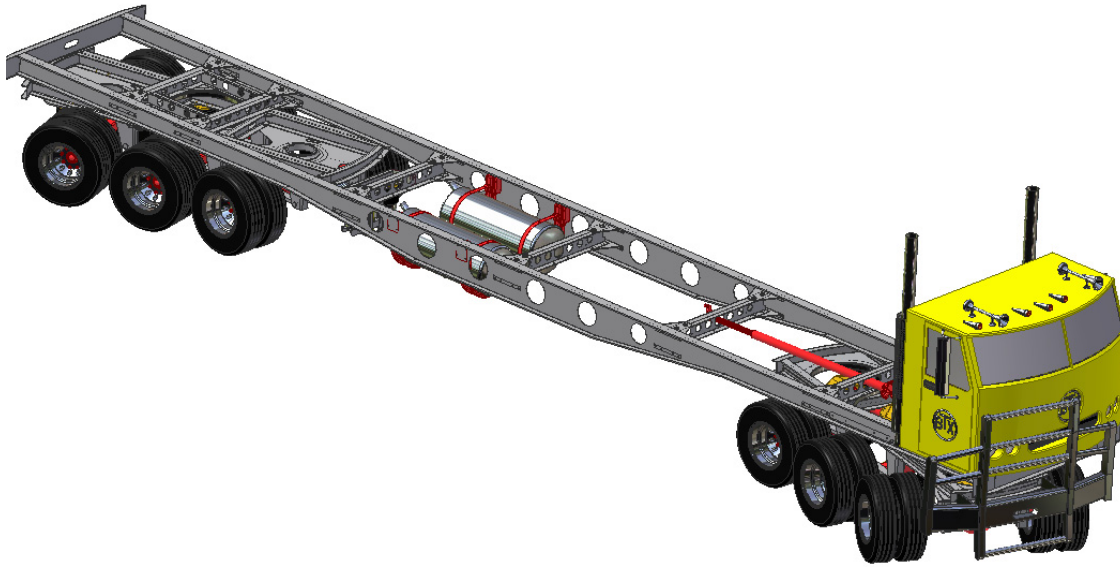
**This exciting vehicle development has the potential to create new benchmarks of efficiency for the transport of volume limited goods and loads limited by mass. These will be seen in more productive urban freight, more useful special purpose vehicles such as fire engines, much more community friendly vehicles for delivering building material such as concrete and a host of other uses, which will rewrite the way we view transport..**

**A prototype vehicle is near to completion. The project stands ready to go forward with solid IP, and an exciting future.**

Patent search regarding the driven steer carriage carried out by attorneys Watermark of Burwood Rd., Hawthorn indicated no sustainable potential objection to granting of patent rights.

Applications are presently in process for patent rights for the Bitrax vehicle in the following countries: Argentina, Australia, Brazil, Canada, Chile, China, Europe, India, Mexico, New Zealand, Russia, South Africa and USA. February 2009, patents have been granted in Mexico, South Africa and Russia. Priority date is November 2003, which means that Bitrax is patent protected until November 2023.





The vehicle, with front and rear Trackaxle assemblies, offers the following advantages:

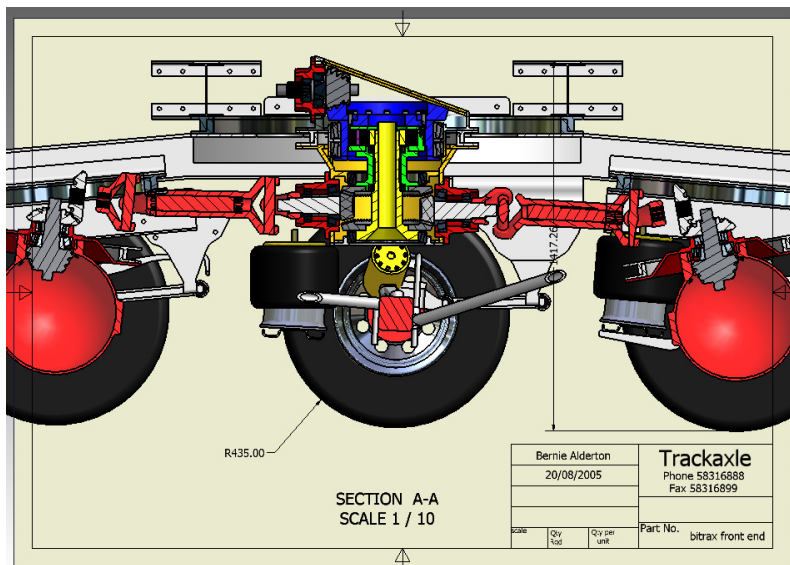
1. Vastly improved maneuverability. This translates to a gain in productivity where a longer vehicle can service previously inaccessible destinations.
2. Improved safety. In the new design, some of the hazardous aspects of a semi trailer revert to the safer expression of a rigid vehicle. The “blind side” aspect of a semi trailer disappears, with the driver fully sighted through his mirrors.
3. Improved working environment. The drive for higher productivity of semi trailers has led to short wheelbase prime movers with greater vibration effects on drivers. The new vehicle will have bus like ride quality, an OH&S gain for drivers.
4. Improved load carrying. Volume carrying capacity will increase when compared to a “tractor trailer” because there is no need for waste space allowing for articulation between towing vehicle and trailer. The vehicle will carry greater mass because there will be a tri-axle at the front of the vehicle rather than two drive axles and two steer wheels.
5. Improved “road friendliness”. The vehicle configuration will deliver dramatic reductions in horizontal tyre forces, with consequent reductions in pavement damage by a factor of 190,000.
6. Better combination vehicles. Where current AB combination vehicles operate with two articulations, Bitrax permits an AB combination with a single articulation, resulting in more stability on road, greater loads, easier reversing and access.
7. Reduced storm water pollution and atmospheric pollution through less rubber left on roads and less exhaust gas generated while turning.

These characteristics will lead to an excellent uptake by the transport industry, particularly when the operators consider that the productivity gains will be available at minimal, if any, extra cost compared with an articulated vehicle.

Regulatory bodies should be encouraged by improved traffic flows, greater safety, less vehicle journeys and reduced driver fatigue.

Authorities responsible for infrastructure should respond positively to the substantial reductions in road wear.

All these considerations point to a substantial level of acceptance by all parties involved with or even interested in road transport. Such a vehicle represents a win for all. The major consideration is therefore the path to full commercial exploitation of the technology.



#### Overview

The Trackaxle mechanism delivers improvements to the rear end performance of the vehicle, but has not addressed the question of improvements at the front. A long trailer with a “prime mover” carries a number of inherent disadvantages. Space must be allocated to allow for articulation on turning, tandem drive axles are damaging to pavements and require a considerable steer effort, while driven tri-axes exacerbate these problems to an unacceptable level. Hence the load carrying ability of a semi trailer is limited by the three axle, ten wheel configuration of a prime mover.

Bitrax addresses all of these issues. It puts three axles on a sub frame in place of the prime mover. This places twelve wheels where previously there were ten, also removing half of the prime mover chassis. The outcome will be a neutral or negative contribution to vehicle tare, combined with increased load space and load carrying ability.

