Modern history is full of breakthroughs in technology, all striving to increase productivity and efficiency. What are the elements that should be taken into consideration in the design and implementation of modern automation systems in a control room? Both industry and international standards are now demanding that Human Factors be considered as part of the design of control rooms, to maximize efficiency and minimize the potential of human error, which can lead to downtime, and a loss of profit as a result of interruptions in production. We will examine how these new standards are helping to address these challenges that are facing the mining industry today – combined with an increased focus on operator health, and how an intelligent and ergonomic workspace can both mitigate risk and optimize production. Optimization is money. We will discuss examples of how to apply technology and innovative control room planning to maximize mineral processing production and minimize risks that can impact overall production and profit.

**Keywords:** Control room design, human factors, optimization, healthy workplace environment