

2017 Engineered Residual Stress

Implementation (ERSI)

Workshop

Held in Layton Utah

September 21 – 22, 2017



LOCKHEED MARTIN



analytical processes / engineered solutions



HILL
ENGINEERING
Predict. Test. Perform.



communications



NORTHROP GRUMMAN



Australian Government
Department of Defence
Science and Technology



ARCONIC

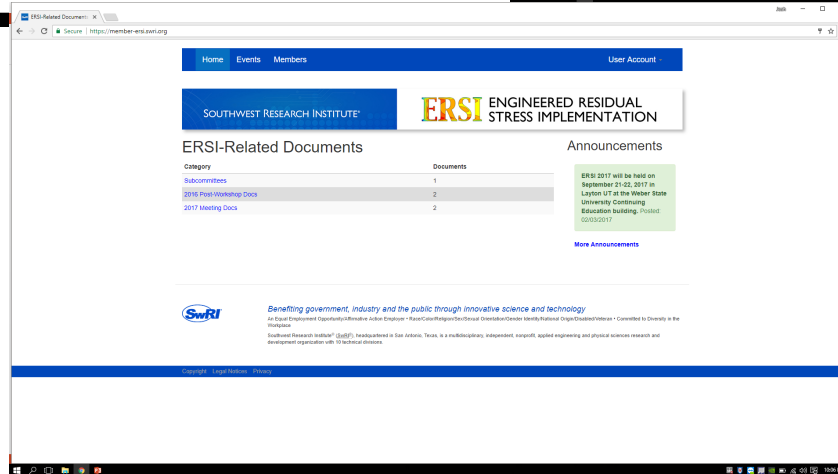
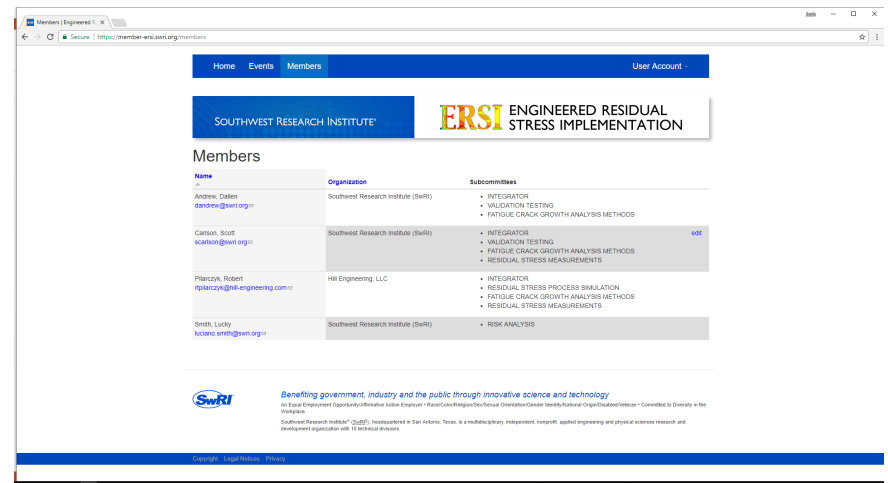
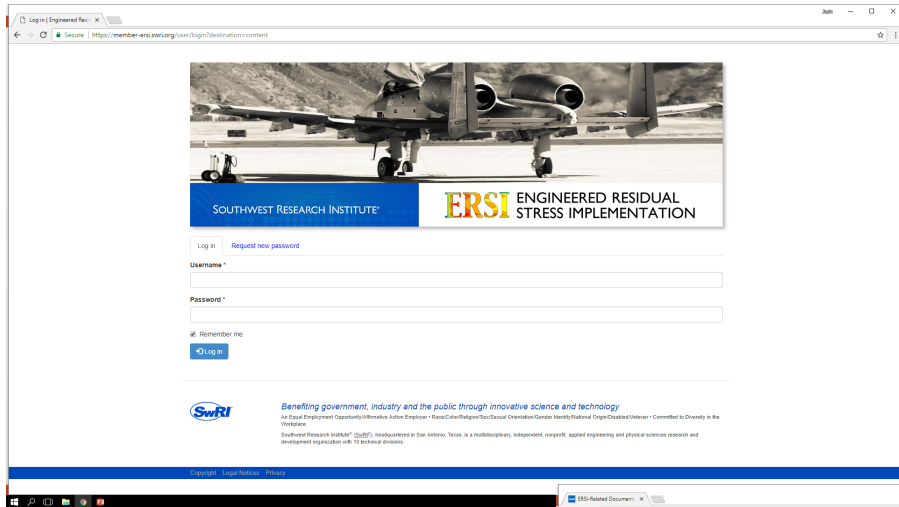


Welcome to the 2017 ERSI Workshop

- Thank you all for coming!
 - Food and Funding
- Restrooms and Break Area are Upstairs
- Internet is Provided for Free as a Guest
- Agenda and Proposed Discussion Format
- Purpose Focused Discussion
 - What are the gaps?
 - What are the documents required?
- ERSI Website



ERSI Website



Purpose of ERSI Workshop

1. To identify and lay out a road map for the implementation of engineered deep residual stress which can be used in the calculation of initial and recurring inspection intervals for fatigue and fracture critical aerospace components.
2. To highlight gaps in the stat-of-the-art and define how those gaps will be filled.
3. Then to define the most effective way to document requirements and guidelines for fleet-wide implementation.

Vision of ERSI Working Group

Within 3-7 years have developed a framework for fleet-wide implementation of a more holistic, physics-based approach for taking analytical advantage of the deep residual stresses field, induced through the Cold Expansion process, into the calculations of initial and recurring inspection intervals for fatigue and fracture critical aerospace components. Then move from there to other deep residual stress inducing processes, like Laser Shock Peening , and Low Plasticity Burnishing.